Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 19.12.96 : ISO 4113

Combination No. : 0 402 846 070

Injection pump

Pump designation : PE6P120A320RS8040 EP type number : 0 412 826 034

Governor

Governer design. : RQV300...1050PA1247

Governer no. : 0 421 814 163

Cust. part No. : 11031221-P04v.11.96

Customer-spec. information

Customer : VCE

Motor

: TD 103 KCE

Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

: + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar :

Tolerance bar : + 0.1

Overflow quantity

min. L/h : 165 Tolerance L/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

: 208.5

Tolerance bar

: **←** 1.5

A01

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 12.00

Tolerance mm :  $\leftarrow$  1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.00

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes	. 722 0	†
		GUIDE SLEEVE POSITION
cm3/1000 strokes	: +- 1.0	+ Rated speed rpm : 1220
Check tolerance cm3/1000s.	: +- 4.0	+ Rack travel in mm : 11.00 + Tolerance mm : + 2.00
Spreed cm3/1000 strokes	: 8.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	44.0	+
cm3/1000s.		+ Rated speed rpm : 500 + Aneroid pressure
Rated speed rpm	: 320	+ hPa : 1500 + Del. quantity
Rack travel in mr Tolerance mm Del. quantity		+ cm3/1000 strokes : 322.0 + cm3/1000 strokes : + 1.0 + Check tolerance + cm3/1000s, : + 4.0
cm3/1000 strokes		Spreed
cm3/1000 strokes Check tolerance		+ cm3/1000 strokes : 8.0 + Check tolerance
cm3/1000s. Spreed		cm3/1000s. : 11.0
cm3/1000 strokes Check tolerance		+
cm3/1000s.		CONTROL LEVER
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	<pre>- control lever - position degree : 45.0 - tolerance degree : +- 4.0</pre>
GUIDE SLEEVE TRAN	VEL.	+ control lever + position degree : 112.0
Rated speed rpm guide sleeve	: 320	+ tolerance degree : +- 4.0 + + RATED SPEED
travel mm		+
Tolerance mm	: <del>+</del> 0.20	+ rack travel mm : 9.80 + Rated speed rpm : 1090
Rated speed rpm guide sleeve	: 1112	Tolerance 1/min : +- 5
travel mm	: 7.91	rack travel mm : 4.00
Tolerance mm	: +- 0.15	Rated speed rpm : 1170 Tolerance 1/min : + 15
Rated speed rpm guide sleeve		t rack travel mm · 0.50
travel mm	: 5.20	+ Tolerance mm : + 0.50 + Rated speed rpm : 1250
Tolerance mm	: <b>←</b> 0.25	+ Rated speed rpm : 1250 +
Rated speed rpm guide sleeve	: 530	<u> </u>
travel mm Tolerance mm	: 3.11 : ← 0.25	+ LOW IDLE
Rated speed rpm	: 1400	+ control lever
guide sleeve		position degree : 84.0
travel mm Tolerance mm	: 11.50 : +- 0.50	tolerance degree : +- 4.0

control lever position degree : 17.0 tolerance degree : +-4.0 Testing: Rated speed rpm 320 rack travel mm 5.20 : + 0.10Tolerance mm Rated speed rpm 220 CRT mm min. : > 7.80 380 Rated speed rpm TORQUE CONTROL Rated speed rpm 500 rack travel mm 12.00 Tolerance mm : +- 0.05 1050 Rated speed rpm rack travel mm 10.80 : + - 0.10Tolerance mm Rated speed rpm 720 rack travel mm 11.10 Tolerance mm : + - 0.15ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 1500 Pressure hPa rack travel mm 12.00 : **←** 0.05 Tolerance mm **MEASUREMENT** Pressure hPa Rated speed rpm 500 rack travel mm 8.70 Tolerance mm : +- 0.10 Rated speed rpm 500 900 Pressure hPa 2.80 rack travel mm Tolerance mm : +- 0.20 Pressure hPa 230

0.25

: +- 0.05

FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1500 Rated speed rpm 1050 Del. quantity cm3/1000 strokes : cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s.4.0 : +-Aneroid pressure Rated speed rpm 500 Del. quantity cm3/1000 strokes : 212.0 cm3/1000 strokes : + 1.0Check tolerance cm3/1000s.: +-4.0 BREAKAWAY Rack travel in mm: 9.80 Rated speed rpm : 1090 Tolerance 1/min : +-LOW IDLE Rated speed rpm : 320 Del. quantity cm3/1000 strokes : 50.0 cm3/1000 strokes : +-2.5 Check tolerance cm3/1000s.: +-5.0 Spreed cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. 8.0

End of test specification sheet

rack travel mm Tolerance mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19,12,96 Edition : ISO 4113 Test oil

Combination No. : 0 402 846 077

Injection pump

Pump designation : PE6P120A320RS8043 EP type number : 0 412 826 035

Governor

Governer design. : RQV300...1050PA1247

Governer no. : 0 421 814 163

Cust. part No. : 11031331-P02v.11.96

Customer-spec. information

Customer : VCE

Motor : TD 103 KCE Power KW : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet : 40 temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity
min. l/h : 205
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.25 Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance "NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.90 Tolerance mm : + 0.05

Del. quantity		Tolerance mm : +- 0.50
cm3/1000 strokes		GUIDE SLEEVE POSITION
cm3/1000 strokes	: +- 1.0	Rated speed rpm : 1250
Check tolerance cm3/1000s.	: +- 4.0	Rack travel in mm : 10.50 Tolerance mm : +- 2.00
Spreed cm3/1000 strokes	: 8.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s.	: 11.0	+ Rated speed rpm : 500
Rated speed rpm	: 320	+ Aneroid pressure + hPa : 1500 + Del. quantity
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +- 0.10	+ cm3/1000 strokes : 322.0 + cm3/1000 strokes : + 1.0 + Check tolerance + cm3/1000s. : + 4.0 + Spreed
cm3/1000 strokes Check tolerance cm3/1000s.		cm3/1000 strokes : 8.0 + Check tolerance - cm3/1000s. : 11.0
Spreed cm3/1000 strokes Check tolerance	: 5.0	
cm3/1000s.	: 8.0	CONTROL LEVER
(B) SETTING OF IN	JECTION PUMP	<pre>control lever position degree : 45.0 tolerance degree : +- 4.0</pre>
GUIDE SLEEVE TRAN	/EL	control lever position degree : 110.0
Rated speed rpm guide sleeve travel mm Tolerance mm	: 320 : 1.34 : +- 0.20	tolerance degree : 4.0  RATED SPEED  rack travel mm : 10.80
Rated speed rpm guide sleeve travel mm		Rated speed rpm : 1090 Tolerance 1/min : + 5
Tolerance mm	: 7.80 : +- 0.15	+ rack travel mm : 4.00 + Rated speed rpm : 1190 + Tolerance 1/min : +- 15
Rated speed rpm guide sleeve travel mm Tolerance mm	: 802 : 5.18 : +- 0.25	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1250
Rated speed rpm guide sleeve travel mm	: 530 : 3.11	LOW IDLE
Tolerance mm	: + 0.25	‡
Rated speed rpm guide sleeve travel mm	: 1400 : 11.50	<pre>control lever position degree : 82.0 tolerance degree : + 4.0</pre>

control lever	
	: 18.0 : +- 4.0
resting.	
Rated speed rpm rack travel mm Tolerance mm	: 320 : 4.60 : +- 0.10
Rated speed rpm	: 220
CRT mm min.	: > 7.40
Rated speed rpm	: 380
TORQUE CONTROL	<del></del>
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.90 : + 0.05
Patad aroad mam	
Rated speed rpm rack travel mm	: 11.80
Tolerance mm	: ← 0.10
Rated speed rpm rack travel mm	: 720 : 12.10
ANEROID/ALTITUDE COMPENSATOR TEST	· · · · · · · · · · · · · · · · · · ·
SETTING	
Rated speed rpm	
Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.90 : +- 0.05
Pressure hPa rack travel mm	: 1500 : 12.90
Pressure hPa rack travel mm Tolerance mm	: 1500 : 12.90
Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm	: 1500 : 12.90 : + 0.05 : - : 500 : 9.50
Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1500 : 12.90 : + 0.05 : + 0.05

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 1050 : 224.0 : + 1.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 212.0 : + 1.0 : + 4.0
BREAKAWAY Rack travel in mm Rated speed rpm Tolerance 1/min	: 10.80 : 1090 : + 5
LOW IDLE Rated speed rpm	: 320

Rated speed rpm Del. quantity	:	320
cm3/1000 strokes	•	50.0
cm3/1000 strokes	: +-	2.5
Check tolerance	• •	2.5
cm3/1000s.	: +-	5.0
Spreed		
cm3/1000 strokes	:	5.0
Check tolerance		
cm3/1000s.	:	8.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.12.96 : ISO 4113 Test oil

Combination No. : 0 402 946 026

Injection pump

Pump designation : PES6P12OA72ORS8045

EP type number : 0 412 926 028

Governor

Governer design. : RQV350...1100PA1305K

Governer no. : 0 421 815 967

Cust. part No. : 1388631

Customer-spec. information Customer : SCANIA

Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0

Tolerance bar : + 0.1

Overflow quantity

Overflow quantity
min. l/h : 75
Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

: 251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm : 3.65 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : + C.30

Check

tolerance "NW : +- 0.50

Start of delivery blocking

Tolerance : + 0.10

Check

tolerance °NW : **←** 0.75

Barrel no. : 1

BASIC SETTING

1	Rated speed rpm : 1400
Rack travel in mm: 11.75	guide sleeve
Tolerance mm : +- 0.05	travel mm : 13.50
No.	Tolerance mm : +- 0.50
Del. quantity + cm3/1000 strokes : 250.0 +	
Cliby 1000 strokes : 250,0	GUIDE SLEEVE POSITION
cm3/1000 strokes : +- 1.0 +	00102 022242 1 00111014
+	Rated speed rpm : 1250
Check tolerance	5 1
cm3/1000s. : +- 7.0	Rack travel in mm : 10.70 Tolerance mm : +- 2.00
Spreed	roterance may 2.00
cm3/1000 strokes : 8.0	<del></del>
+	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance + cm3/1000s. : 14.0 +	Dated aread are 1100
cm3/1000s. : 14.0	Rated speed rpm : 1100 Aneroid pressure
Rated speed rpm : 350	hPa : 1500
1	Del. quantity
+	cm3/1000 strokes : 250.0
Rack travel in mm : 4.10 + Tolerance mm : + 0.10 +	cm3/1000 strokes : + 1.0
Del. quantity	Check tolerance cm3/1000s. : +- 7.0
cm3/1000 strokes : 30.0	Spreed
cm3/1000 strokes : + 3.0	cm3/1000 strokes : 8.0
Check tolerance	Check tolerance
cm3/1000s. : + 6.0	cm3/1000s. : 14.0
Spreed + cm3/1000 strokes : 4.0 +	
Check tolerance	<del></del>
cm3/1000s. : 8.0	CONTROL LEVER
+	
(B) SETTING OF INJECTION PUMP	control lever position degree : 64.0
WITH GOVERNOR	tolerance degree : +- 4.0
1	to to take a degree to the
	control lever
GUIDE SLEEVE TRAVEL	position degree : 118.0
Rated speed rpm : 350	tolerance degree : +- 4.0
guide steeve	RATED SPEED
travel mm : 2.00	
Tolerance mm : + 0.20	rack travel mm : 10.70
Rated speed rpm : 1165	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Rated speed rpm : 1165 + guide sleeve +	Toterance Timin : +- 3
travel mm : 10.15	rack travel mm : 4.00
Tolerance mm : + 0.15	Rated speed rpm : 1235
<u></u> +	Tolerance 1/min : +- 15
Rated speed rpm : 755	nack +navol == 0.50
guide sleeve + travel mm : 6.14 +	rack travel mm : 0.50 Tolerance mm : +- 0.50
Tolerance mm : + 0.25	Rated speed rpm : 1300
+	·
Rated speed rpm : 460	
guide sleeve + travel mm : 4.07 +	LOW IDLE
Tolerance mm : + 0.25	LUM IVLL
· · · · · · · · · · · · · · · · · · ·	

		†
control lever position degree tolerance degree	: 71.0 : + 4.0	FUEL DELIVERY CHARACTERISTICS
control lever position degree tolerance degree	: 17.0 : + 4.0	Aneroid pressure hPa : 1500
Testing:		Rated speed rpm : 700 cm3/1000 strokes : +- 4.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.10 : + 0.10	cm3/1000s. : + 6.0  Aneroid pressure
Rated speed rpm	: 250	+ hPa : - Rated speed rpm : 500
CRT mm min.	: > 6.50	<pre>Del. quantity     cm3/1000 strokes : 163.0</pre>
Rated speed rpm	: 275	- cm3/1000 strokes : + 1.0 - Check tolerance - cm3/1000s. : + 4.0
TORQUE CONTROL		DDCAVAUAV
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.75 : + 0.05	+ BREAKAWAY + Rack travel in mm : 10.70 + Rated speed rpm : 1145
Rated speed rpm rack travel mm Tolerance mm	: 700 : 10.90 : + 0.10	Tolerance 1/min : +- 5
ANEROID/ALTITUDE		STARTING FUEL DELIVERY
COMPENSATOR TEST		Rated speed rpm : 100 rack travel mm : 7.10 Tolerance mm : + 0.50
SETTING		+ Del. quantity + cm3/1000 strokes : 100.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1500 : 11.75	cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 24.0
MEASUREMENT		Ī
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 7.10	LOW IDLE  Rated speed rpm : 350  Del. quantity
Rated speed rpm		- cm3/1000 strokes : 30.0 - cm3/1000 strokes : +- 3.0
Pressure hPa rack travel mm Tolerance mm	: 340 : 8.35 : + 0.25	- Check tolerance - cm3/1000s. : +- 6.0 - Spreed - cm3/1000 strokes : 4.0
Pressure hPa rack travel mm Tolerance mm	: 800 : 10.65 : + 0.05	Check tolerance cm3/1000s. : 8.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.12.96 Test oil : ISO 4113

Combination No. : 0 403 476 112

Injection pump

Pump designation : PES6MW100/720RS1225

: -1

EP type number : 0 413 406 220

Governor

Governer design. : RSV400...1000MW1A338

: -1

Governer no. : 0 420 085 184

Cust. part No. :

Customer—spec. information
Customer : LIEBHERR
Motor : D 916 TI
Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.05 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.51
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.25
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 145.0

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 4.0

Spreed

cm3/1000 strokes : 4.0

Check tolerance cm3/1000s.	: 7.5
Rated speed rpm	: 400
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes cm3/1000s. Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF INJUMITH GOVERNOR	: 6.80 : + 0.10 : 22.5 : + 2.0 : + 4.5 : 3.5 : 5.0
GUIDE SLEEVE POSIT	ON
Rated speed rpm	: 800
Rack travel in mm Tolerance mm	: 0.65 : +- 0.35
governor spring pre-tension click setting x	: 5.00
FULL LOAD DELIVERY	AT FULL LOAD STOP
the second secon	: 1000
Aneroid pressure hPa Del. quantity	: 1000
cm3/1000 strokes cm3/1000 strokes	: 145.0 : +- 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 7.5
CONTROL LEVER	
control lever position degree tolerance degree	: 100.0 : +- 4.0

RATED SPEED	
rack travel mm	: 12.20
Rated speed rpm	: 1025
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1075
Tolerance 1/min	: + 15
rack travel mm	: 1.00
Tolerance mm	: + 0.70
Rated speed rpm	: 1200
rack travel mm	: 4.00
Rated speed rpm	: 1085

LOW IDL	Ε
---------	---

control lever position degree tolerance degree	: 74.0 : +- 4.0	
Setting point w/o	out bumper spring	3

Rated speed	rom		400
nated speed	rpin	•	700
rack travel	mm	:	6.30

## Testing:

Rated speed rpm	:	400
rack travel mm	:	6.80
Tolerance mm	: +	- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

## TORQUE CONTROL

Rated speed rpm	:	1000
rack travel mm	:	13.25
Tolerance mm	; ⊣	- 0.05

Rated speed rpm : 500 rack travel mm : 13.25 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 13.25 Tolerance mm : +- 0.05

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 550
Pressure hPa : 1000
rack travel mm : 13.25
Tolerance mm : +- 0.05

## **MEASUREMENT**

Pressure hPa : Rated speed rpm : 550
rack travel mm : 11.20
Tolerance mm : +- 0.10

Rated speed rpm : 550

Pressure hPa : 330 rack travel mm : 11.65 Tolerance mm : + 0.05

Pressure hPa : 510
rack travel mm : 12.60
Tolerance mm : + 0.10

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 139.0
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 5.0

Spreed cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0

Aneroid pressure

hPa : 1000
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 146.5
cm3/1000 strokes : +- 2.0
Check tolerance

: +- 5.0

cm3/1000s.

Aneroid pressure hPa : -Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 105.0 cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

#### **BREAKAWAY**

Rack travel in mm: 12.20
Rated speed rpm: 1025
Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0

#### LOW IDLE

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 22.5
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

Part no. : 0 460 413 001 Pump designation : VE3/11F1250L163

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8035.05.200
Power KW : 42.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar +-: 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm +-: +-0,02

Check

tolerance mm +-:+-0.04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 2.7
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Supply pomp

pressure bar : 4.1 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 69.0

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1400

Del. quantity

cm3/1000 strokes : 20.0

A14

Tolerance	+ Overflow quantity
cm3/1000 str. +-: 2.0 Shutoff solenoid	+ ccm/10s : 97.2
	+ Tolerance
Volt : 12	+ ccm/10s ←: 41.6
STARTING FUEL DELIVERY	Check tolerance
OTTO TOLE VELLETIE	+ ccm/10s +-: 41.6
Rated speed rpm : 100	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 105.0	+
Tolerance	+ Rated speed rpm : 500
cm3/1000 str. +-: 25.0	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s ←: 22.2
	t charles the transfer
	+ Check tolerance
	+ ccm/10s +-: 22.2 + Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
ENDECTION FORE TEST SPECIFICATIONS	I voct . 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1200	+ Rated speed rpm : 1400
Rated speed rpm : 1200	+ Rated speed rpm : 1400 + Del. quantity
SV travel mm : 6.0	- cm3/1000 strokes : 20.0
Tolerance mm + : 0.4	Tolerance
Check	+ cm3/1000 str. + : 2.0
tolerance mm +-: 0.7	- Check tolerance
Shutoff solenoid	+  cm3/1000s. +-: 6.0
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 600	+
	+ Rated speed rpm : 1350
SV travel mm : 1.2	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 50.0
Check	+ Tolerance
tolerance mm + : 0.7 Shutoff solenoid	+ cm3/1000 str. +-: 8.0 + Check tolerance
Volt : 12	+ cm3/1000s. +-: 10.0
. 12	Shutoff solenoid
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Volt : 12
	+
Rated speed rpm : 1200	Rated speed rpm : 1460
Supply pomp	+ Del. quantity
pressure bar : 5.8	+ cm3/1000 strokes : 1.5
Tolerance bar +-: 0.3	† Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 1.5
Volt : 12	+ Check tolerance
Date of annual control of the Contro	+ cm3/1000s. + : 1.5
Rated speed rpm : 500	+ Shutoff solenoid
Supply pomp pressure bar : 2.8	† Volt : 12
Tolerance bar + : 0.3	Rated speed rpm : 1250
Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : 70.5
1 16	+ Tolerance
OVERFLOW QUANTITY	+ cm3/1000 str. +-: 1.5
	+ Check tolerance
Rated speed rpm : 1250	+ cm3/1000s. +-: 3.5
•	•

Shutoff solenoid Volt :	12	Check tolerance cm3/1000s. + : 1.5
Rated speed rpm : Del. quantity	500	Shutoff solenoid Volt : 12
	60.5	
cm3/1000 str. + : Check tolerance	1.5	
cm3/1000s. +-: Shutoff solenoid	3.5	START TRANSITION
Volt :	12	Rated speed rpm : 250
Rated speed rpm : Del. quantity	750	Del. quantity cm3/1000 strokes : 45.0
cm3/1000 strokes : Tolerance	+	Tolerance cm3/1000 str. +-: 20.0
cm3/1000 str. +- : Check tolerance	0.5	Shutoff solenoid Volt : 12
cm3/1000s. + : Shutoff solenoid	3.0	- · · · · · · · · · · · · · · · · · · ·
Volt :	12 +	Rated speed rpm : 150 Del. quantity
ELECTR. SHUTOFF	<del></del> ‡	cm3/1000 strokes : 115.0 Tolerance cm3/1000 str. +- : 25.0
CONTROL LEVER, IDLE S	тор	Shutoff solenoid Volt : 12
Rated speed rpm : Del. quantity	350	
cm3/1000 strokes : Tolerance	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 str. +-: Check tolerance	1.5	Dimension K mm : - Dimension KF mm : 5,2
cm3/1000s. +-: Spread	1.5	Tolerance mm +-: +-0,2 Dimension MS mm : 1,6
cm3/1000 strokes :	5.0	Tolerance mm +-: +-0,2
FULL-LOAD STOP CONTRO	+ LEVER +	
Rated speed rpm : Del. quantity	+	CONTROL LEVER POSITION SET
cm3/1000 strokes : Tolerance	1.5	
cm3/1000 str. +-:	4 -	Candonal Lauren
Spread	1.5	Control lever position YA mm : 37,939,9
Spread cm3/1000 strokes : Check tolerance	5.0	position YA mm : 37,939,9  Control lever
Spread cm3/1000 strokes : Check tolerance cm3/1000s. +-: Spread	5.0	position YA mm : 37,939,9
Spread cm3/1000 strokes : Check tolerance cm3/1000s. +-: Spread cm3/1000 strokes :	5.0	position YA mm : 37,939,9  Control lever
Spread cm3/1000 strokes : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes : IDLE DELIVERY	5.0	position YA mm : 37,939,9  Control lever
Spread cm3/1000 strokes : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes : IDLE DELIVERY	5.0	position YA mm : 37,939,9  Control lever position YB mm : 44,549,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

Part no. : 0 460 413 002 Pump designation: VE3/11F1250L163-1

Customer-spec. information : IVECO-FIAT Customer : 8035.06.200 Motor Power KW 38.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature \*C : Tolerance °C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

bar Tolerance bar + :

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm +-:+-0.02Check

tolerance mm +-:+-0.04

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Setting mm 3.0 Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1000 Supply pomp pressure bar 6.0 Tolerance bar +-: 0.3 Shutoff solenoid Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 65.5 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 3.5 Shutoff solenoid Volt 12

#### IDLE SETTING

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 17.5 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3,5 Check tolerance cm3/1000S. 3.5 :

#### FULL-LOAD SPEED REGULATION

No.	1
Del. quantity cm3/1000 strokes : 45.0	Rated speed rpm : 1250
Tolerance	Rated speed rpm : 1250 Overflow quantity
cm3/1000 str. +-: 2.0	+ ccm/10s : 97.2
Shutoff solenoid	+ Tolerance
Volt : 12	+
	+
STARTING FUEL DELIVERY	+ Check tolerance
	+
Rated speed rpm : 100	+ Shutoff solenoid
Del. quantity cm3/1000 strokes : 105.0	† Volt : 12
Tolerance	Rated speed rpm : 500
cm3/1000 str. +-: 25.0	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s +-: 22.2
	+
	+ Check tolerance
	+ ccm/10s + : 22.2
TALLECTION CHIMP TEST OFFICE CATTONS	+ Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS	† Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
PENERG PENERG CHARACTERIOTIC	TO DEEL VERT AND BREAKAWAT CHARACTERISTIC
Rated speed rpm : 1250	+ Rated speed rpm : 1350
	+ Del. quantity
SV travel mm : 4.8	+ cm3/1000 strokes : 45.0
Tolerance mm +: 0.4	+ Tolerance
Check	+  cm3/1000  str. + : 2.0
tolerance mm ←: 0.7	Check tolerance
Shutoff solenoid	+ cm3/1000s. +-: 6.0
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 800	I vott . 12
nated opeca i piii . Goo	+ Rated speed rpm : 1400
SV travel mm : 1.5	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 10.0
Check	+ Check tolerance
tolerance mm +-: 0.7	+  cm3/1000s. + : 10.0
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Rated speed rpm : 1450
SOFFET FORE PRESSORE CHARACTERISTIC	Del. quantity
Rated speed rpm : 1250	+ cm3/1000 strokes : 1.5
Supply pomp	+ Tolerance
pressure bar : 7.1	+ cm3/1000 str. +: 1.5
Tolerance bar + : 0.3	+ Check tolerance
Shutoff solenoid	+  cm3/1000s. + : 1.5
Volt : 12	+ Shutoff solenoid
Poted around num . 500	+ Volt : 12
Rated speed rpm : 500	Rated speed rpm : 1250
Supply pomp pressure bar : 3.7	+ Rated speed rpm : 1250 + Del. quantity
Tolerance bar + : 0.3	+ cm3/1000 strokes : 65.0
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. +: 1.5
	+ Check tolerance
OVERFLOW QUANTITY	+ cm3/1000s. $+$ : 3.0

Shutoff solenoid -	- Check tolerance
Volt : 12 -	cm3/1000s. + : 1.5 Shutoff solenoid
Rated speed rpm : 500 - Del. quantity -	Volt : 12
cm3/1000 strokes : 58.0 - Tolerance -	
cm3/1000 str. +: 1.5 - Check tolerance -	
cm3/1000s. +: 3.0 - Shutoff solenoid -	START TRANSITION
Volt : 12 -	Rated speed rpm : 250
Rated speed rpm : 750 - Del. quantity -	Del. quantity cm3/1000 strokes : 40.0
cm3/1000 strokes : 65.5 Tolerance	Tolerance
cm3/1000 str. + : 0.5 - Check tolerance	Shutoff solenoid Volt : 12
cm3/1000s. +: 3.0 Shutoff solenoid	. 12
Volt : 12	Rated speed rpm : 150 Del. quantity
	cm3/1000 strokes : 115.0 Tolerance
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	cm3/1000 str. + : 25.0  Shutoff solenoid
Rated speed rpm : 400	Volt : 12
· · · · · · · · · · · · · · · · · · ·	
Del. quantity -	ACCEMOLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : 1.5 - Tolerance -	ASSEMBLY AND ADJUSTMENT DIMENSIONS
<pre>cm3/1000 strokes : 1.5 Tolerance - cm3/1000 str. +- : 1.5 Check tolerance</pre>	Dimension K mm : - Dimension KF mm : 5,2
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +-: +-0,2 Dimension MS mm : 1,6
cm3/1000 strokes :       1.5         Tolerance cm3/1000 str. +- :       1.5         Check tolerance cm3/1000s. +- :       1.5         Spread cm3/1000 strokes :       5.0	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +-: +-0,2
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +-: +-0,2 Dimension MS mm : 1,6
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +-: +-0,2 Dimension MS mm : 1,6
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +-: +-0,2 Dimension MS mm : 1,6 Tolerance mm +-: +-0,2  CONTROL LEVER POSITION
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 1.5 Spread</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 IDLE DELIVERY  Rated speed rpm : 475 Del. quantity</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,049,0
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000S. +- : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. +- : 1.5 Spread cm3/1000S. +- : 1.5 Spread cm3/1000S. +- : 5.0 IDLE DELIVERY</pre>	Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,049,0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.95 Test oil : ISO 4113

Part no. : 0 460 413 004 Pump designation : VE3/11F1250L163-2

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8035.06.220
Power KW : 33.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm + : +0,02

Check

tolerance mm +:+0.04

## INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 3.0
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 800 Supply pomp

pressure bar : 5.0 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 59.5
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 3.5

Shutoff solenoid Volt : 12

#### IDLE SETTING

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 12.5 Tolerance cm3/1000 str. +-:2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 3.5

#### FULL-LOAD SPEED REGULATION

Del. quantity	+
cm3/1000 strokes : 15.0	+ Rated speed rpm : 1250
Tolerance	+ Overflow quantity
cm3/1000 str. +-: 3.0	+ ccm/10s : 97.2
Shutoff solenoid	+ Tolerance
Volt : 12	+ ccm/10s +-: 41.6
STARTING FUEL DELIVERY	Check tolerance
	+ ccm/10s +: 41.6
Rated speed rpm : 100	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 105.0	1
Tolerance	Rated speed rpm : 500
cm3/1000 str. + : 25.0	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s + : 22.2
	+ Check tolerance
	+ ccm/10s +: 22.2
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
	+
TIMING DEVICE CHARACTERISTIC	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1000	+ Rated speed rpm : 1400
rated speed (piii : 1000	+ Del. quantity
SV travel mm : 4.9	+ cm3/1000 strokes : 15.0
Tolerance mm + : 0.4	+ Tolerance
Check	+ cm3/1000 str. + : 3.0
tolerance mm + : 0.7	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. +: 6.0
Volt : 12	+ Shutoff solenoid
, ,,,	+ Volt : 12
Rated speed rpm : 600	
	Rated speed rpm : 1350
SV travel mm : 1.2	+ Del. quantity
Tolerance mm +: 0.4	+ cm3/1000 strokes : 45.0
Check	+ Tolerance
tolerance mm +-: 0.7	+ cm3/1000 str. +: 8.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+ cm3/1000s. + : 10.0
	+ Shutoff solenoid
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Volt : 12
	+
Rated speed rpm : 1250	+ Rated speed rpm : 1450
Supply pomp	+ Del. quantity
pressure bar : 7.0	+ cm3/1000 strokes : 1.5
Tolerance bar +-: 0.3	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. + : 1.5
Volt : 12	+ Check tolerance
	+  cm3/1000s. + : 1.5
Rated speed rpm : 500	+ Shutoff solenoid
Supply pomp	+ Volt : 12
pressure bar : 3.5	+
Tolerance bar +-: 0.3	+ Rated speed rpm : 1250
Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : 52.5
	+ Tolerance
OVERFLOW QUANTITY	+ cm3/1000 str. +-: 1.5

Check tolerance cm3/1000s. +: 3.5 Shutoff solenoid Volt : 12  Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 55.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 3.5 Shutoff solenoid	Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Shutoff solenoid Volt : 12  Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance
Volt : 12	+ cm3/1000s. + : 4.0 + Shutoff solenoid
Rated speed rpm : 800 Del. quantity	Volt : 12
cm3/1000 strokes : 59.5 Tolerance	+
Check tolerance	<del></del>
Shutoff solenoid Volt : 12	+ START TRANSITION
	Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 35.0
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Tolerance + cm3/1000 str. +: 15.0 + Shutoff solenoid
Rated speed rpm : 375 Del. quantity	Volt : 12
cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 150
cm3/1000 str. + : 1.5 Check tolerance	Del. quantity cm3/1000 strokes : 105.0
cm3/1000s. +: 1.5 Spread	Tolerance + cm3/1000 str. +: 25.0
cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER	+ Shutoff solenoid + Volt : 12
	ACCEMENT AND ADMINISTRATE DEMONSTRATE
Rated speed rpm : 375  Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : 1.5 Tolerance	Dimension K mm : - Dimension KF mm : 5,5
cm3/1000 str. + : 1.5 Spread	Tolerance mm + : +0,2 Dimension MS mm : 1,6
cm3/1090 strokes : 5.0 Check tolerance	+ Tolerance mm → : +-0,2
cm3/1000s. + : 1.5 Spread	
cm3/1000 strokes : 5.0  IDLE DELIVERY	CONTROL LEVER POSITION SET
	Control Loven
Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 1.5	Control lever position YA mm : 37,939,9
CIID/ 1000 SCI 0055 . 1.3	1

Control lever position YB mm	: 46,051,0	

End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Part no. : 0 460 413 005 Pump designation : VE3/11F1200L163-3

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8035.05.265
Power KW : 35.0

#### TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C : 45 Tolerance °C → : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172
Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

#### BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm +-: +-0,02

Check

tolerance mm +-:+-0.04

#### INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 3.4
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 24

## SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Supply pomp
pressure bar : 4.5
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 24

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 63.0
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 24

#### IDLE SETTING

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 str. +: 2.0 Shutoff solenoid Volt 24 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.: 3.5

## FULL-LOAD SPEED REGULATION

Del. quantity cm3/1000 strokes : 18.0	Bated aread are . 1250
Tolerance	Rated speed rpm : 1250
	Overflow quantity
	+ ccm/10s : 97.2
Shutoff solenoid	† Tolerance
Volt : 24	± ccm/10s ←: 41.6
STARTING FUEL DELIVERY	Check tolerance
	+
Rated speed rpm : 100	+ Shutoff solenoid
Del. quantity	→ Volt : 24
cm3/1000 strokes : 115.0	+
Tolerance	+ Rated speed rpm : 500
cm3/1000 str. +-: 25.0	<pre>+ Overflow quantity</pre>
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 24	+ Tolerance
	+ ccm/10s +-: 22.2
	+ Check tolerance
	1
	+ ccm/10s + : 22.2 + Shutoff solenoid
THIS COUNTY DIMENT CONTRACTORS	
INJECTION-PUMP TEST SPECIFICATIONS	† Volt : 24
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1200	Rated speed rpm : 1350
	+ Del. quantity
SV travel mm : 6.5	+ cm3/1000 strokes : 18.0
Tolerance mm + : 0.4	+ Tolerance
Check	+ cm3/1000 str. $+$ : 3.0
tolerance mm + : 0.7	+ Check tolerance
Shutoff solenoid	+  cm3/1000s. + : 6.0
Volt : 24	+ Shutoff solenoid
	+ Volt : 24
Rated speed rpm : 500	+
,	+ Rated speed rpm : 1300
SV travel mm : 1.0	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 41.0
Check	+ Tolerance
tolerance mm +: 0.7	+ cm3/1000 str. +: 8.0
Shutoff solenoid	+ Check tolerance
Volt : 24	+ cm3/1000s. + : 10.0
· · · · · · · · · · · · · · · · · · ·	+ Shutoff solenoid
SUPPLY PUMP PRESSURE CHARACTERISTIC	Volt : 24
Dated aread non - 4200	Poted operations 4/00
Rated speed rpm : 1200	Rated speed rpm : 1400
Supply pomp	+ Del. quantity
pressure bar : 6.3	+ cm3/1000 strokes : 1.5
Tolerance bar $\div$ : 0.3	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. + : 1.5
Volt : 24	Check tolerance
	+  cm3/1000s. + : 1.5
Rated speed rpm : 500	+ Shutoff solenoid
Supply pomp	+ Volt : 24
pressure bar : 3.2	†
Tolerance bar +: 0.3	+ Rated speed rpm : 1250
Shutoff solenoid	+ Del. quantity
Volt : 24	+ cm3/1000 strokes : 57.5
OURDEL OF OURNITTY	Tolerance
OVERFLOW QUANTITY	+ cm3/1000 str. ←: 1.5
ADE	

Check tolerance +	Tolerance
cm3/1000s. +: 3.5	cm3/1000 str. + : 1.5
Shutoff solenoid +	Check tolerance
Volt : 24 +	cm3/1000s. + : 1.5
1	Shutoff solenoid
Detail and desail and 1 500	
Rated speed rpm : 500	• Volt : 24
Del. quantity	•
cm3/1000 strokes : 61.0	•
Tolerance	
cm3/1000 str. +: 1.5	•
Sheck tolerance +	•
cm3/1000s. ÷ : 3.5	
Shutoff solenoid +	START TRANSITION
Volt : 24 +	•
ì	Rated speed rpm : 250
Rated speed rpm : 800	
	Del. quantity
Del. quantity +	cm3/1000 strokes : 45.0
cm3/1000 strokes : 63.0	Tolerance
Tolerance	cm3/1000 str. +-: 20.0
cm3/1000 str. +-: 0.5	Shutoff solenoid
Check tolerance +	· Volt : 24
cm3/1090s. ÷ : 5.0	
Shutoff solenoid +	•
Volt : 24 →	Rated speed rpm : 150
1	Del. quantity
<u>1</u>	cm3/1000 strokes : 125.0
Ţ	
<u> </u>	Tolerance
ELECTR. SHUTOFF +	cm3/1000 str. +-: 25.0
CONTROL LEVER, IDLE STOP	Shutoff solenoid
20111105 554511/ 1255 0.01	
	. VOIT • 2/6
750	• Volt : 24
Rated speed rpm : 350	volt : 24
	volt : 24
Del. quantity	· ————————————————————————————————————
Del. quantity cm3/1000 strokes : 1.5	- Volt : 24 - ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes : 1.5 Tolerance	- ASSEMBLY AND ADJUSTMENT DIMENSIONS
Del. quantity cm3/1000 strokes : 1.5	· ————————————————————————————————————
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5	- ASSEMBLY AND ADJUSTMENT DIMENSIONS - Dimension K mm : -
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance	- ASSEMBLY AND ADJUSTMENT DIMENSIONS - Dimension K mm : - Dimension KF mm : 5,5
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +-0,2
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +-0,2
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6
Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  FULL-LOAD STOP CONTROL LEVER	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2 Dimension MS mm : 1,6 Tolerance mm +-: +0,2
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2 Dimension MS mm : 1,6 Tolerance mm +-: +0,2
Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm: 350 Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2 Dimension MS mm : 1,6 Tolerance mm +-: +0,2  CONTROL LEVER POSITION SET
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2 Dimension MS mm : 1,6 Tolerance mm +-: +0,2  CONTROL LEVER POSITION SET
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +: 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +: 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Spread cm3/1000strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Spread cm3/1000strokes : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,549,5
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  IDLE DELIVERY	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9 Control lever
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 420	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,549,5
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 5.0  IDLE DELIVERY  Rated speed rpm : 420 Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,549,5
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 5.0  IDLE DELIVERY  Rated speed rpm : 420 Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,549,5
Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  IDLE DELIVERY  Rated speed rpm : 420	ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm + : +0,2 Dimension MS mm : 1,6 Tolerance mm + : +0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,549,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

Part no. : 0 460 414 013 Pump designation : VE4/11F1250L164

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8045.05.200
Power KW : 58.0

#### TEST BENCH REQUIREMENTS

Calibrating oil

return

temperature  $^{\circ}C$  : 45 Tolerance  $^{\circ}C$   $\leftarrow$  : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzie holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.2Tolerance mm +:+0.02

Check

tolerance mm +:+0.04

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 3.2
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Supply pomp
pressure bar : 5.4
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 69.0
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

## IDLE SETTING

Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 str. + :2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.: 3.5

## FULL-LOAD SPEED REGULATION

Del. quantity	† n
cm3/1000 strokes : 44.0	Rated speed rpm : 1250
Tolerance	Overflow quantity
cm3/1000 str. + : 2.0	+ ccm/10s : 97.2
Shutoff solenoid	+ Tolerance
Volt : 12	+ ccm/10s +: 41.6
STARTING FUEL DELIVERY	+ Check tolerance
SINGITING FUEL DEFTACKE	
Rated speed rpm : 100	+ ccm/10s + : 41.6
· · · · · · · · · · · · · · · · · · ·	+ Shutoff solenoid
Del. quantity cm3/1000 strokes : 115.0	† Volt : 12
Tolerance	Dotad aread area 500
cm3/1000 str. +-: 25.0	Rated speed rpm : 500
Shutoff solenoid	+ Overflow quantity
Volt : 12	+ ccm/10s : 63.8
vott : 12	Tolerance
	+ ccrn/10s + : 22.2
	T Check tolerance
	+ ccm/10s + : 22.2
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
THE COLOR OF THE STREET TO THE COLOR OF THE	1
TIMING DEVICE CHARACTERISTIC	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
	+
Rated speed rpm : 1250	+ Rated speed rpm : 1350
	+ Del. quantity
SV travel mm : 7.2	+ cm3/1000 strokes : 44.0
Tolerance mm +-: 0.4	+ Tolerance
Check	+ cm3/1000 str. $+$ : 2.0
tolerance mm +-: 0.7	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 6.0
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 500	+
	+ Rated speed rpm : 1400
SV travel mm : 0.8	+ Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 12.0
Check	+ Check tolerance
tolerance mm +: 0.7	+  cm3/1000s. + : 8.0
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
CHOOLY DIMA DOCCOURT CHARACTERISTS	Poted speed 1/50
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1450
Poted speed ppm : 1250	Del. quantity
Rated speed rpm : 1250	- cm3/1000 strokes : 1.5
Supply pomp	Tolerance
pressure bar : 7.3	cm3/1000 str. +: 1.5
Tolerance bar +-: 0.3	+ Check tolerance + cm3/1000s. + : 1.5
Shutoff solenoid	
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 500	I vott : 12
, ,	+ Rated speed rpm : 1250
Supply pomp pressure bar : 3.9	
·	+ Del. quantity + cm3/1000 strokes : 65.5
Tolerance bar + : 0.3 Shutoff solenoid	Tolerance
Volt : 12	+ cm3/1000 str. +: 1.5 + Check tolerance
OVERFLOW QUANTITY	744000
CUTATION UNIMINITY	+ cm3/1000S. $+$ : 3.5

Shutoff solenoid Volt	: 12	Check tolerance cm3/1000s. +: 1.5
Rated speed rpm	: 500	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes Tolerance	: 62.5	+
cm3/1000 str. +-	: 1.5	Ŧ
Check tolerance cm3/1000s. +-	: 3.5	‡
Shutoff solenoid Volt	: 12	+ START TRANSITION
	<del>2</del> 750	+ Rated speed rpm : 250 + Del. quantity
Del. quantity cm3/1000 stroke§	c 69.0	+ cm3/1000 strokes : 57.0 + Tolerance
Tolerance cm3/1000 str. 🏎	÷ 0.5	+ cm3/1000 str. + : 10.0 + Shutoff solenoid
Check tolerance cm3/1000s. +-	: 3.0	+ Volt : 12
Shutoff solenoid Volt	: 12	Rated speed rpm : 150
		+ Del. quantity + cm3/1000 strokes : 115.0
ELECTR. SHUTOFF	F CTOD	Tolerance + cm3/1000 str. +-: 25.0
CONTROL LEVER, IDL		+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		<u> </u>
a=7/3000 atackso	. 15	
cm3/1000 strokes Tolerance		+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
	: 1.5	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS + Dimension K mm : - + Dimension KF mm : 5,5
Tolerance cm3/1000 str. +-	: 1.5	+ Dimension K mm :-
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +-	: 1.5 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread	: 1.5 : 1.5 : 5.0	Dimension K mm : -  Dimension KF mm : 5,5  Tolerance mm +-: +0,2  Dimension MS mm : 1,6
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes FULL-LOAD STOP CON Rated speed rpm	: 1.5 : 1.5 : 5.0 TROL LEVER	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +-: +0,2 Dimension MS mm : 1,6
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes	: 1.5 : 1.5 : 5.0 OTROL LEVER : 350	Dimension K mm : -  Dimension KF mm : 5,5  Tolerance mm +-: +-0,2  Dimension MS mm : 1,6  Tolerance mm +-: +-0,2  CONTROL LEVER POSITION
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	: 1.5 : 1.5 : 5.0 TROL LEVER : 350 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 strokes	: 1.5 : 1.5 : 5.0 OTROL LEVER : 350 : 1.5 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 strokes Check tolerance cm3/1000s. +	: 1.5 : 1.5 : 5.0 OTROL LEVER : 350 : 1.5 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 strokes Check tolerance	: 1.5 : 1.5 : 5.0 ITROL LEVER : 350 : 1.5 : 1.5 : 5.0 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 strokes Check tolerance cm3/1000s. + Spread	: 1.5 : 1.5 : 5.0 ITROL LEVER : 350 : 1.5 : 1.5 : 5.0 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,149,1
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread cm3/1000 strokes Check tolerance cm3/1000s. + Spread	: 1.5 : 1.5 : 5.0 OTROL LEVER : 350 : 1.5 : 1.5 : 5.0 : 1.5	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever
Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. + Spread cm3/1000s. + Spread cm3/1000 strokes IDLE DELIVERY	: 1.5 : 1.5 : 5.0  OTROL LEVER : 350 : 1.5 : 1.5 : 5.0 : 5.0 : 5.0	Dimension K mm : - Dimension KF mm : 5,5 Tolerance mm +- : +-0,2 Dimension MS mm : 1,6 Tolerance mm +- : +-0,2  CONTROL LEVER POSITION SET  Control lever position YA mm : 37,939,9  Control lever position YB mm : 44,149,1

BOSCH INJ. PUMP TEST SPECIFICATIONS	(as of UT) mm : 0,2
Note remarks	+ Tolerance mm +-: +-0,02 + Check
	tolerance mm + : +-0,04
Refer to Service Info for test and	†
adjustment instruct. See microcard(s) W40u/	+ INJECTION PUMP SETTING VALUES
	+ 2NGEGION FONE SETTING VALUES
Edition : 21.04.95 Test oil : ISO 4113	† TIMING DEVICE TRAVEL
Test oil : ISO 4113	Poted aread may 200
Part no. : 0 460 414 015	+ Rated speed rpm : 800
Pump designation: VE4/11F1250L164-1	→ Setting mm : 2.1
· -	+ Tolerance mm +-: 0.2
Contains and Sufferential	+ Shutoff solenoid
Customer—spec. information	Volt : 12
Customer : IVECO-FIAT Motor : 8045.05.200 Power KW : 53.0	SUPPLY PUMP PRESSURE
Power KW : 53.0	1
	+ Rated speed rpm : 800
TECT DENICLI DEGLITDEMENTS	Supply pomp + pressure bar : 4.0
TEST BENCH REQUIREMENTS	+ Tolerance bar +: 0.3
Calibrating-oil	Shutoff solenoid
return	+ Volt : 12
temperature °C : 45	+
Tolerance °C + : 1	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Overflow	† Rated speed rpm : 800
restriction mm : 0.55	+ Del. quantity
	+ cm3/1000 strokes : 67.5
	+ Tolerance
Inlet press. bar : 0.35	+ cm3/1000 str. +-: 0.5
Tolerance bar +-: 0.05	+ Spread + cm3/1000 strokes : 4.0
	+ Shutoff solenoid
Test nozzle holde	+ Volt : 12
assembly : 1 688 901 020	+
0	† IDLE SETTING
Opening pressure bar : 172	† Rated speed rpm : 350
Tolerance bar + : 3	+ Del. quantity
	+ cm3/1000 strokes : 25.0
	+ Tolerance
Test lines : 1 680 750 000	+ cm3/1000 str. + : 2.0
Outside diameter : 6.00	+ Shutoff solenoid + Volt : 12
oats ac a rameter . O.00	Spread
x inside diameter : 2.00	+ cm3/1000 strokes : 3.5
x Length mm : 840	Check tolerance
REMARKS	Ī
7 Table 17 Table 18 T	+
	†
PECTABITAIC OF DELTATEDY	full-Load SPEED REGULATION
BEGINNING OF DELIVERY	† Rated speed rpm : 1365
Prestroke	+ Nation open i piii . 1905
	•

B**O**2

Del. quantity cm3/1000 strokes		<b>7</b> 2 0	†	Dahad award awa		(00
Tolerance	•	32.0	<b>T</b>	Rated speed rpm	:	600
cm3/1000 str. +-		3.0	<b>T</b>	Supply pomp pressure bar		3.2
Shutoff solenoid	•	2.0	Ţ	Tolerance bar +-	•	0.3
Volt		12	Ī	Shutoff solenoid	٠	0.5
<b>ΛΟ</b> ( <b>C</b>	•	16	Ţ	Volt		12
STARTING FUEL DEL	TVE	ov	7	νοιι	•	12
STARTENG FUEL DEL	7 4 2	XI.	Ţ	OVERFLOW QUANTITY		
Rated speed rpm	:	100	I	OVERLEON GONIALTIL	•	
Del. quantity	•	100	I	Rated speed rpm		1250
cm3/1000 strokes		115.0	Ι	Overflow quantity		1230
Tolerance	•	115.0	I	ccm/10s		97.2
cm3/1000 str. +		25.0	$\overline{1}$	Tolerance	•	71.6
Shutoff solenoid	•	25.0	I	ccm/10s +-		41.6
Volt		12	Ţ	CCM/ TOS +-	•	41.0
VUCC	•	12	Ţ	Check tolerance		
			7	ccm/10s +-		41.6
			T		•	41.0
			7	Shutoff solenoid		10
			†	Volt	•	12
INJECTION-PUMP TE	ST 9	SPECTETCATTONS	Ī	Rated speed rpm		500
THOUGHTON LOUIS IF	J, (	N FOTI TOWITOIAS	I	Overflow quantity		700
TIMING DEVICE CHA	BAC-	TERISTIC	I	ccm/10s		63.8
TITITIES DEVICE COM	INAC.	ICKIDIIC	I	Tolerance	•	0,00
Rated speed rpm	:	1100	I	ccm/10s +-		22.2
Naced Speed 1 pill	•	1 100	I	CCIII/ 103	•	22.6
SV travel mm	•	5.2	1	Check tolerance		
Tolerance mm +	:	0.4	1	ccm/10s +		22.2
Check	•	0.4	<u> </u>	Shutoff solenoid	•	CC•C
tolerance mm +	•	0.7	1	Volt	•	12
Shutoff solenoid	•	0.1	1	VOCC	•	16
Volt	:	12	1	DELIVERY AND BREA	KAWA	Y CHARACTERISTIC
	•		1	TEST CONTRACTOR		
Rated speed rpm	:	600	_ _	Rated speed rpm	:	1365
21. 21. 24. 21. 1. (2.11.			1	Del. quantity		
SV travel mm	:	0.5	1	cm3/1000 strokes	:	32.0
Tolerance mm +	:	0.3	1	Tolerance	•	
Check	-	-,,	1	cm3/1000 str. +-	•	3.0
tolerance mm +	:	0.6	1	Check tolerance	•	<del>-</del>
Shutoff solenoid	-	~·•	1	cm3/1000s. +-	:	6.0
Volt	:	12	1	Shutoff solenoid	•	
	•	· <del></del>	1	Volt	:	12
Rated speed rpm	:	1250	1	<del></del>	-	· <del>-</del>
The second second second	-	· <del></del>	1	Rated speed rpm	:	1395
SV travel mm	:	5.7	1	Del. quantity	•	· <del>- · -</del>
Tolerance mm +	:	0.4	1	cm3/1000 strokes	:	12.0
Check	•	-• •	1	Check tolerance	•	
tolerance mm +-	•	0.7	1	cm3/1000s. +-	:	8.0
Shutoff solenoid	•	<b>5</b> ,.	1	Shutoff solenoid	•	9.0
Volt	:	12	1	Volt	:	12
	•		1		•	, •••
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	1	Rated speed rpm	:	1430
12.1 21 1 4.11 1 11200		2	1	Del. quantity	•	, . <del></del>
Rated speed rpm	:	12 <b>50</b>	1	cm3/1000 strokes	:	1.5
Supply pomp	-	· <del></del> -	1	Tolerance	-	: <del></del>
pressure bar	:	6.3	1	cm3/1000 str. +-	:	1.5
Tolerance bar +-	•	0.3	1	Check tolerance	-	
Shutoff solenoid	•	J.J	1	cm3/1000s. +-	:	1.5
Volt	:	12	1		•	
1000	•	1	1.			

Shutoff solenoid Volt :	12	‡	Rated speed rpm Del. quantity		
Rated speed rpm :	1250	‡	cm3/1000 strokes Tolerance	:	1.5
Del. quantity cm3/1000 strokes :	61.0	‡	cm3/1000 str. +- Check tolerance	:	1.5
Tolerance cm3/1000 str. +-:	1.5	$\frac{1}{1}$	cm3/1000s. +- Shutoff solenoid	:	1.5
Check tolerance cm3/1000s. +-:	3.5	+	Volt	:	12
Shutoff solenoid		Ŧ	Rated speed rpm	:	425
Volt :	12	‡	Del. quantity cm3/1000 strokes	:	5.0
Rated speed rpm : Del. quantity		‡	Tolerance cm3/1000 str. +-	:	3.0
cm3/1000 strokes : Tolerance		+	Check tolerance cm3/1000s. +-	:	4.0
cm3/1000 str. + : Check tolerance	1.5	<u>†</u>	Shutoff solenoid Volt	:	12
cm3/1000s. + : Shutoff solenoid	3.5	‡			
Volt :	12	1			
Rated speed rpm : Del. quantity	800	<del> </del>			
cm3/1000 strokes : Tolerance	67.5	+	START TRANSITION		
cm3/1000 str. +-: Check tolerance	0.5	1	Rated speed rpm Del. quantity	:	250
cm3/1000s.  → : Shutoff solenoid	3.0	İ	cm3/1000 strokes Tolerance	:	50.0
Volt :	12	1	cm3/1000 str. +- Shutoff solenoid		10.0
		+	Volt	:	12
ELECTR. SHUTOFF CONTROL LEVER, IDLE S	STOP	+	Rated speed rpm	:	150
Rated speed rpm :	350	Ì	Del. quantity cm3/1000 strokes	•	115.0
Del. quantity cm3/1000 strokes :			Tolerance		
Tolerance		Ŧ	cm3/1000 str. +- Shutoff solenoid		
cm3/1000 str. + : Check tolerance	1.5	‡	Volt	:	12
cm3/1000s. +-: Spread	1.5	‡	ASSEMBLY AND ADJU	STMEN	IT DIMENSIONS
cm3/1000 strokes :	5.0	‡	Dimension K mm	: -	
FULL-LOAD STOP CONTRO	DL LEVER	‡	Dimension KF mm Tolerance mm +-		
Rated speed rpm : Del. quantity	350	1	Dimension MS mm Tolerance mm +-	: 1,	6
cm3/1000 strokes : Tolerance	1.5	+			•
cm3/1000 str. +-: Check tolerance	1.5	†	CONTROL LEVER POS	TTTON	1
cm3/1000s. +:	1.5	İ	SET SET	Z 1 Z O I V	•
IDLE DELIVERY		1			
		T			

Control lever position YA mm

: 37,9..39,9

Control lever

: 43,6..48,6 position YB mm

End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microsard(s) W490/...

Edition : 21.04.95 Test oil : ISO 4113

Part no. : 0 460 414 024 Pump designation : VE4/11F1250L164-2

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8045.06.220
Power KW : 48.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar +- : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

**REMARKS** 

BEGINNING OF DELIVERY

Prestroke

**B**06

(as of UT) mm : 0.2Tolerance mm +-: +-0.02

Check

tolerance mm + : +0.04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 3.2 Tolerance mm + : 0.2 Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Supply pomp

pressure bar : 4.4 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 62.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 3.5

FULL-LOAD SPEED REGULATION

Del. quantity	t
cm3/1000 strokes : 45.0	+ Rated speed rpm : 600
Tolerance	+ Supply pomp
cm3/1000 str. +-: 2.0	+ pressure bar : 3.5
Shutoff solenoid	† Tolerance bar +-: 3.5
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
STARTING FUEL DELIVERY	+
	+ OVERFLOW QUANTITY
Rated speed rpm : 100	1
Del. quantity	+ Rated speed rpm : 1250
cm3/1000 strokes : 115.0	+ Overflow quantity
Tolerance	+ ccm/10s : 97.2
cm3/1000 str. +-: 25.0	+ Tolerance
Shutoff solenoid	+ ccm/10s + : 41.6
Volt : 12	T CCM/105 . 41.0
	Check tolerance
	+ ccm/10s +: 41.6
	+ Shutoff solenoid
	+ Volt : 12
TALLEST ON DUMP TEST OFFICE TALES	T 0.4 1
INJECTION—PUMP TEST SPECIFICATIONS	+ Rated speed rpm : 500
	+ Overflow quantity
TIMING DEVICE CHARACTERISTIC	+ ccm/10s : 62.5
	+ Tolerance
Rated speed rpm : 1000	+ ccm/10s + : 20.8
	† <b></b>
SV travel mm : 5.2	+ Check tolerance
Tolerance mm + : 0.4	+
Check	+ Shutoff solenoid
tolerance mm + : 0.7	+ Volt : 12
Shutoff solenoid	+
Volt : 12	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
	1750
Rated speed rpm : 600	+ Rated speed rpm : 1350
	+ Del. quantity
SV travel mm : 1.6	+ cm3/1000 strokes : 45.0
Tolerance mm + : 0.4	+ Tolerance
Check	+ cm3/1000 str. +-: 2.0
tolerance mm +-: 0.7	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 6.0
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 1250	+
	Rated speed rpm : 1400
SV travel mm : 5.8	+ Del. quantity
Tolerance mm +: 0.4	+ cm3/1000 strokes : 13.0
Check	+ Check tolerance
tolerance mm + : 0.7	+ cm3/1000s. +-: 8.0
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
<b>1</b> 000	I vocc . 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1450
SOFFLE FUME FRESSURE CHARACTERISTIC	· · · · · · · · · · · · · · · · · · ·
Dated around from 1 1750	+ Del. quantity + cm3/1000 strokes : 1.5
Rated speed rpm : 1250	
Supply pomp	+ Tolerance
pressure bar : 6.4	+ cm3/1000 str. +: 1.5
Tolerance bar + : 0.3	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. + : 1.5
Volt : 12	+

Shutoff solenoid Volt : 12	+ Rated speed rpm : 450 + Del. quantity
Rated speed rpm : 1250	cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes : 53.5	+ cm3/1000 str. +-: 1.5
Tolerance	Check tolerance +-: 1.5
cm3/1000 str. +-: 1.5 Check tolerance	+ Shutoff solenoid + Volt : 12
<pre>cm3/1000s. +-: 3.5 Shutoff solenoid</pre>	<del> </del>
Volt : 12	<u>†</u>
Rated speed rpm : 500 Del. quantity	
cm3/1000 strokes : 59.0	T START TRANSITION
Tolerance cm3/1000 str. ←: 2.0	Rated speed rpm : 250
Check tolerance cm3/1000s. + : 3.5	+ Del. quantity + cm3/1000 strokes : 40.0
Shutoff solenoid Volt : 12	<pre></pre>
Rated speed rpm : 750	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes : 62.5	<u>†</u>
Tolerance cm3/1000 str. +-: 0.5	Rated speed rpm : 150
Check tolerance	+ Del. quantity + cm3/1000 strokes : 125.0
cm3/1000s. +-: 3.0 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 25.0
Volt : 12	+ Shutoff solenoid + Volt : 12
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Rated speed rpm : 350	Dimension K mm : - Dimension KF mm : 5,2
Del. quantity cm3/1000 strokes : 1.5	Tolerance mm + : +-0,2 Dimension MS mm : 1,6
Tolerance	Tolerance mm + : +-0,?
cm3/1000 str. + : 1.5 Check tolerance	† <del>†</del>
cm3/1000s.	+ + CONTROL LEVER POSITION
cm3/1000 strokes : 5.0	} SET
FULL-LOAD STOP CONTROL LEVER	Control lever
Rated speed rpm : 350 Del. quantity	position YA mm : 37,939,9
cm3/1000 strokes : 1.5	Control lever
Tolerance cm3/1000 str. +-: 1.5	position YB mm : 44,249,6
Check tolerance cm3/1000s. +-: 1.5	
IDLE DELIVERY	+ End of test-specification sheet
	i de la companya del companya de la companya del companya de la co

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.12.95 : ISO 4113 Test oil

: 0 460 406 049 Part no. Pump designation : VE6/10F2400L216

Customer-spec. information Customer : VW

Motor : 087T-Vol LLK Power KW 90.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar Tolerance bar + :

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1500 Aneroid pressure

hPa 800

Setting mm 1.7 Tolerance mm + : 0.2 Shutoff solenoid

Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

hPa 008 Supply pomp

pressure bar 6.0 Tolerance bar +-: 0.3

Shutoff solenoid Volt 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500 Aneroid pressure hPa 800 Del. quantity cm3/1000 strokes : 46.0 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : Check tolerance

cm3/1000s.3.0 Shutoff solenoid

Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 26.0 Tolerance

cm3/1000 str. + :

Shutoff solenoid Volt 12

Check tolerance cm3/1000s. 3.0

## IDLE SETTING

Rated speed rpm 415 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. + :2.0 Shutoff solenoid

Volt

12

Spread			+ Aneroid pressure
cm3/1000 strokes	:	2.0	hPa : 800
Check tolerance			1
cm3/1000s.	:	3.0	SV travel mm : 3.1
			+ Tolerance mm +-: 0.4
			+ Check
			tolerance mm + : 0.7
			+ Shutoff sclenoid
FULL-LOAD SPEED R	EGUL	_ATION	+ Volt : 12
Rated speed rpm	:	2675	SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa	:	800	
Del. quantity			Rated speed rpm : 2400
cm3/1000 strokes	:	16.0	+ Aneroid pressure
Tolerance			+ hPa : 800
cm3/1000 str. +-	•	2.0	+ Supply pomp
Shutoff solenoid			pressure bar : 8.2
Volt	:	12	+ Tolerance bar + : 0.3
			+ Shutoff solenoid
STARTING FUEL DEL	IVEF	₹Y	† Volt : 12
			+
Rated speed rpm	•	100	+ Rated speed rpm : 600
Del. quantity			+ Aneroid pressure
cm3/1000 strokes	:	65.0	+ hPa : 800
Tolerance			+ Supply pomp
cm3/1000 str. +	:	25.0	+ pressure bar : 3.6
Shutoff solenoid			† Tolerance bar +-: 0.3
Volt	:	12	+ Shutoff solenoid
			+ Volt : 12
		•	<b>†</b>
			OVERFLOW QUANTITY
		·	+
			+ Rated speed rpm : 600
INJECTION-PUMP TE	ST S	PECIFICATIONS	Rated speed rpm : 600 Overflow quantity
			Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5
INJECTION-PUMP TE			Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance
TIMING DEVICE CHA		TERISTIC	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5
TIMING DEVICE CHA			Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8
TIMING DEVICE CHA Rated speed rpm Aneroid pressure		TERISTIC 2400	Rated speed rpm : 600  Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance
TIMING DEVICE CHA		TERISTIC	Rated speed rpm : 600  Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa		TERISTIC 2400 800	Rated speed rpm : 600  Overflow quantity ccm/10s : 62.5  Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa SV travel mm		TERISTIC 2400 800 4.2	Rated speed rpm : 600  Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm +		TERISTIC 2400 800	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm + Check		7ERISTIC 2400 800 4.2 0.4	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +		TERISTIC 2400 800 4.2	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid		ERISTIC 2400 800 4.2 0.4 0.7	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +		7ERISTIC 2400 800 4.2 0.4	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	RACT : : :	7ERISTIC 2400 800 4.2 0.4 0.7	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm		ERISTIC 2400 800 4.2 0.4 0.7	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	RACT : : :	2400 800 4.2 0.4 0.7 12	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm	RACT : : :	7ERISTIC 2400 800 4.2 0.4 0.7	Rated speed rpm : 600  Overflow quantity ccm/10s : 62.5  Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	RACT : : :	7ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s +: 20.8  Check tolerance ccm/10s +: 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6  Check tolerance
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm	RACT : : :	7ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800 0.8	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +-	RACT : : :	7ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check	: : : : : : : : : : : : : : : : : : :	ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800 0.8 0.4	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Check tolerance mm +	: : : : : : : : : : : : : : : : : : :	7ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800 0.8	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	2400 800 4.2 0.4 0.7 12 1200 800 0.8 0.4 0.7	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Check tolerance mm +	: : : : : : : : : : : : : : : : : : :	ERISTIC 2400 800 4.2 0.4 0.7 12 1200 800 0.8 0.4	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	2400 800 4.2 0.4 0.7 12 1200 800 0.8 0.4 0.7	Rated speed rpm : 600 Overflow quantity ccm/10s : 62.5 Tolerance ccm/10s + : 20.8  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12

B10

Aneroid pressure hPa :	800	+	Del. quantity cm3/1000 strokes : 40.0
Del. quantity cm3/1000 strokes : Tolerance	16.0	†	Tolerance cm3/1000 str. +-: 1.5 Check tolerance
cm3/1000 str. +-: Check tolerance	2.0	Ī	cm3/1000s. +-: 3.0 Shutoff solenoid
cm3/1000s. +: Shutoff solenoid	4.0	Ī	Volt : 12
Volt :	12	+	Rated speed rpm : 1500 Aneroid pressure
Rated speed rpm : Aneroid pressure		+	hPa : 800 Del. quantity
hPa : Del. quantity	800	+	cm3/1000 strokes : 46.0 Tolerance
cm3/1000 strokes : Check tolerance		‡	cm3/1000 str. +-: 0.5 Check tolerance
cm3/1000s. +: Shutoff solenoid	6.0	+	cm3/1000s. + : 2.2 Shutoff solenoid
Volt : Rated speed rpm :	12 2575	†	Volt : 12
Aneroid pressure hPa :	800	Ī	ELECTR. SHUTOFF
Del. quantity cm3/1000 strokes :	30.0	+	CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. +-:	5.0	+	Rated speed rpm : 415 Del. quantity
Check tolerance cm3/1000s. +-:	6.0	+	cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt :	12	†	cm3/1000 str. +-: 1.5 Check tolerance
Rated speed rpm : Aneroid pressure	800	Ī	cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0
hPa : Del. quantity	300	<u></u>	FULL-LOAD STOP CONTROL LEVER
cm3/1000 strokes : Tolerance	34.5	+	Rated speed rpm : 415
cm3/1000 str. + : Check tolerance	0.5	+	Del. quantity cm3/1000 strokes : 1.5
cm3/1000s. +-: Shutoff solenoid	3.0	+	Tolerance cm3/1000 str. +-: 1.5
Volt : Rated speed rpm :	12 2400	<u> </u>	Spread cm3/1000 strokes : 5.0 Check tolerance
Aneroid pressure	800	Ţ	cm3/1000s. +-: 1.5 Spread
Del. quantity cm3/1000 strokes :	38.5	+	cm3/1000 strokes : 5.0
Tolerance cm3/1000 str. + :	1.0	+	IDLE DELIVERY
Check tolerance cm3/1000s. +-:	2.2	†	Rated speed rpm : 750 Del. quantity
Shutoff solenoid Volt :	12	‡	cm3/1000 strokes : 2.0 Tolerance
Rated speed rpm : Aneroid pressure	600	Ī	cm3/1000 str. + : 2.0 Check tolerance cm3/1000s. +-: 2.0
hPa :	800	7	CIRS/ 10003. 1 . 2.0

Shutoff solenoid Volt 12

## START TRANSITION

380 Rated speed rpm :

Del. quantity cm3/1000 strokes : 20.0

Tolerance

cm3/1000 str. + :10.0

Shutoff solenoid

Volt 12

230 Rated speed rpm

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 str. + :25.0

Shutoff solenoid

Volt 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +: +-0,1 Dimension KF mm : 6,4 Tolerance mm + : + 0,2Dimension MS mm : 1,8 Tolerance mm +-: +-0,2 : 12,7 TLA travel mm

CONTROL LEVER POSITION SET

Control lever

: 8,5...10,5 position YA mm

Control lever

: 71,0..89,6 position YB mm

Note remarks Refer to Service	Info for test and
adjustment instru See microcard(s)	
Edition Test oil	: 23.05.95 : ISO 4113
Part no. Pump designation	: 0 460 485 023 : VE5/8F2100L457-2
Customer-spec. in Customer Motor	formation : VW : 2,4l WK-SD T4
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C Tolerance °C +-	
Overflow restriction mm	: 0.55
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle hoide assembly	: 1 688 901 000
Opening pressure bar Tolerance bar +-	: 147 : 3
Te <b>s</b> t lines	: 1 680 750 000
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 840
REMARKS	

Rated speed rpm : 1500
Setting mm : 4.3 Tolerance mm +-: 0.2 Shutoff solenoid
Volt : 12
SUPPLY PUMP PRESSURE
Rated speed rpm : 1500 Supply pomp
pressure bar : 7.4 Tolerance bar +-: 0.3
Shutoff solenoid Volt : 12
FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes : 35.5 Tolerance
cm3/1000 str. +-: 0.5 Spread
cm3/1000 strakes : 2.0 Shutoff solenoid
Volt : 12
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING
Rated speed rpm : 540
Del. quantity cm3/1000 strokes : 7.0 Tolerance
cm3/1000 str. + : 0.5 Shutoff solenoid
Volt : 12
IDLE DELIVERY
Rated speed rpm : 415 Del. quantity
cm3/1000 strokes : 8.0 Tolerance
cm3/1000 str. +-: 1.0 Spread
cm3/1000 strokes : 2.0 Shut_ff solenoid
Volt : 12
FULL-LOAD SPEED REGULATION
Rated speed rpm : 2400
Del. quantity cm3/1000 strokes : 12.0

	Check
Tolerance + cm3/1000 str. + : 2.0 +	tolerance mm +-: 0.7
Shutoff solenoid	Shutoff solenoid
Volt : 12	Volt : 12
+	· · · · · · · · · · · · · · · · · · ·
STARTING FUEL DELIVERY	Rated speed rpm : 1100
t	
Rated speed rpm : 100	SV travel mm : 1.6
Del. quantity	Tolerance mm + : 0.4
cm3/1000 strokes : 60.0	Check tolerance mm +-: 0.7
cm3/1000 str. + : 25.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	
<del>)</del>	SUPPLY PUMP PRESSURE CHARACTERISTIC
+	
†	Rated speed rpm : 1790
LOAD-DEPENDENT START OF DELIVERY	Supply pomp
SETTING	pressure bar : 8.1 Tolerance bar +-: 0.3
DELIVERY DIFFERENCE	Shutoff solenoid
DECIVER DITTERENCE	Volt : 12
Rated speed rpm : 1500	
Del. quantity	Rated speed rpm : 1100
cm3/1000 strokes : -7.0	Supply pomp
Tolerance	pressure bar : 6.2
cm3/1000 str. + : 1.0 +	Tolerance bar +: 0.3
Shutoff solenoid + 12 + 12	Shutoff solenoid Volt : 12
Volt : 12	Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1500	Rated speed rpm : 2100
Del. quantity +	Overflow quantity
cm3/1000 strokes : -0.2	ccm/10s : 97.2
Tolerance +	Tolerance
cm3/1000 str. ←: 0.1	
cm3/1000 str.  ←: 0.1 + Shutoff solenoid +	Tolerance ccm/10s +-: 41.6
cm3/1000 str. ←: 0.1	Tolerance ccm/10s +-: 41.6 Check tolerance
cm3/1000 str.  ←: 0.1 + Shutoff solenoid +	Tolerance ccm/10s + : 41.6  Check tolerance
cm3/1000 str. ← : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5
cm3/1000 str. ← : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12
cm3/1000 str. ← : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600
cm3/1000 str. ← : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity
cm3/1000 str. ← : J.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8
cm3/1000 str. ← : J.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 str. ← : 0.1	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance
cm3/1000 str. ← : J.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance
cm3/1000 str. ← : J.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 str. ← : O.1 Shutoff solenoid	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance
cm3/1000 str. ← :	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7
cm3/1000 str. ← : J.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 str. ← : O.1 Shutoff solenoid	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid
cm3/1000 str. ← :	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7
cm3/1000 str. ← :	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5  Shutoff solenoid Volt : 12  Rated speed rpm : 600  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7  Shutoff solenoid Volt : 12
cm3/1000 str. ← :	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid
<pre>cm3/1000 str. ← :</pre>	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400
<pre>cm3/1000 str. ← :</pre>	Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 34.7 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400 Del. quantity
<pre>cm3/1000 str. ← :</pre>	Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s +: 22.2  Check tolerance ccm/10s +: 34.7 Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2400

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Tolerance	+ Check tolerance
cm3/1000 str. + : 2.0	+  cm3/1000s. + : 2.2
Check tolerance	+ Shutoff solenoid
cm3/1000s. + : 4.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	1
, , ,	
Rated speed rpm : 2300	+ ELECTR. SHUTOFF
Del. quantity	· · · · · · · · · · · · · · · · · · ·
	+ CONTROL LEVER, IDLE STOP
cm3/1000 strokes : 22.0	†
Tolerance	+ Rated speed rpm : 415
cm3/1000 str. +-: 5.0	† Del. quantity
Check tolerance	+ cm3/1000 strokes : 1.5
cm3/1000s. + : 6.0	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 1.5
Volt : 12	- Check tolerance
, , , , , , , , , , , , , , , , , , , ,	+ cm3/1000s. +-: 1.5
Rated speed rpm : 2600	· · · · · · · · · · · · · · · · · · ·
	+ Spread
Del. quantity	+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 3.0	†
Tolerance	+ FULL-LOAD STOP CONTROL LEVER
cm3/1000 str. + : 3.0	+
Check tolerance	+ Rated speed rpm : 415
cm3/1000s. + : 3.0	+ Del. quantity
Shutoff solenoid	+ cm3/1000 strokes : 1.5
Volt : 12	+ Tolerance
	- cm3/1000 str. +-: 1.5
Rated speed rpm : 2100	Spread
Del. quantity	
cm3/1000 strokes : 29.5	+ Check tolerance
Tolerance	+  cm3/1000s. + : 1.5
cm3/1000 str. + : 1.0	+ Spread
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. +-: 2.2	+
cm3/1000s. +-: 2.2 Shutoff solenoid	
Shutoff solenoid	
Shutoff solenoid Volt : 12	<del>+</del> + 
Shutoff solenoid Volt : 12 Rated speed rpm : 1850	RESIDUAL QUANTITY
Shutoff solenoid Volt : 12 Rated speed rpm : 1850 Del. quantity	RESIDUAL QUANTITY
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5	RESIDUAL QUANTITY Rated speed rpm : 490
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance	RESIDUAL QUANTITY Rated speed rpm : 490 Del. quantity
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +- : 1.0
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. + : 1.0  Check tolerance
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. + : 1.0  Check tolerance  cm3/1000s. + : 2.5
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +-: 1.0  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. + : 1.0  Check tolerance  cm3/1000s. + : 2.5
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +-: 1.0  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +-: 1.0  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. + : 1.5	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +-: 1.0  Check tolerance  cm3/1000s. +-: 2.5  Shutoff solenoid
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. + : 1.5 Check tolerance	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. + : 1.0  Check tolerance  cm3/1000s. + : 2.5  Shutoff solenoid  Volt : 12
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 7.8  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. + : 1.0  Check tolerance  cm3/1000s. + : 2.5  Shutoff solenoid  Volt : 12
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity  cm3/1000 strokes : 7.8  Tolerance  cm3/1000 str. +- : 1.0  Check tolerance  cm3/1000s. +- : 2.5  Shutoff solenoid  Volt : 12  CHECKING LOAD-DEPENDENT  START OF DELIVERY
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12	RESIDUAL QUANTITY  Rated speed rpm : 490  Del. quantity cm3/1000 strokes : 7.8  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250	RESIDUAL QUANTITY  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 7.8 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity	RESIDUAL QUANTITY  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 7.8 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250	RESIDUAL QUANTITY  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 7.8 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 35.5 Tolerance	RESIDUAL QUANTITY  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 7.8 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500
Shutoff solenoid Volt : 12  Rated speed rpm : 1850 Del. quantity cm3/1000 strokes : 32.5 Tolerance cm3/1000 str. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 33.3 Tolerance cm3/1000 str. +- : 1.5 Check tolerance cm3/1000s. +- : 3.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 35.5	RESIDUAL QUANTITY  Rated speed rpm : 490 Del. quantity cm3/1000 strokes : 7.8 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity

Tolerance cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +-	:	4.0
Shutoff solenoid Volt	:	12
TIMING-DEVICE TRAV	/EL	DIFFERENCE
Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes	:	-1.2
Tolerance cm3/1000 str. +-	:	0.1
Check tolerance cm3/1000s. +-	:	0.1
Shutoff solenoid Volt	:	12
DELIVERY DIFFERENCE	Œ	
Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 str. +	:	1.5
Check tolerance cm3/1000s. +	:	1.5
Shutoff solenoid Volt	:	12
PRESSURE DIFFERENCE	CE	
Rated speed rpm	:	1500
Supply pomp pressure bar	:	-1.0
Tolerance bar +- Shutoff solenoid	:	0.2
Volt	:	12
TIMING-DEVICE TRAN	/EL	DIFFERENCE
Rated speed rpm Tolerance mm +-	:	1500 0.2
Check tolerance mm +-	:	0.6
Shutoff solenoid Volt	:	12
START TRANSITION		
		<b>79</b> 0
Rated speed rpm Del. quantity	:	380
cm3/1000 strokes Tolerance	:	27.0
cm3/1000 str. +- Shutoff solenoid	:	10.0
Volt	:	12

Rated speed rpm : 180
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 str. +- : 25.0
Shutoff solenoid
Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,8
Tolerance mm + : +-0,2
Dimension MS mm : 1,4
Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 21.04.95 Edition : ISO 4113 Test oil

: 0 460 485 030 Part no. Pump designation: VE5/8F2100L457-5

Customer-spec. information

Customer : VW

: 2,41 WK-SD T4 Motor

Power KW 57.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

Tolerance bar +-: 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm :

Setting mm 4.3 Tolerance mm +-: 0.2 Shutoff solenoid

12 Volt

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Supply pomp

pressure bar 7.4 Tolerance bar +-: 0.3 Shutoff solenoid

Volt

12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 35.5

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540 Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt 12

## IDLE DELIVERY

Rated speed rpm : 415

Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance	+ Check
cm3/1000 str. +-: 2.0	tolerance mm +-: 0.7
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+
STARTING FUEL DELIVERY	+ Rated speed rpm : 1100
	+
Rated speed rpm : 100	+ SV travel mm : 1.6
Del. quantity	Tolerance mm + : 0.4
cm3/1000 strokes : 60.0 Tolerance	← Check + tolerance mm ←: 0.7
cm3/1000 str. +-: 25.0	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	1
	SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
	+ Rated speed rpm : 1790
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp
SETTING	pressure bar : 8.1
DELIVERY ATTECHNAL	+ Tolerance bar +: 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1500	† Volt : 12
Del. quantity	Rated speed rpm : 1500
cm3/1000 strokes : -7.0	+
Tolerance	+ Rated speed rpm : 1250
cm3/1000 str. + : 1.0	†
Shutoff solenoid	Rated speed rpm : 1100
Volt : 12	+ Supply pomp
PRESSURE DIFFERENCE	pressure bar : 6.2 Tolerance bar + : 0.3
LUSDOONE DILLEVENCE	+ Shutoff solenoid
Rated speed rpm : 1500	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : -0.2	+ OVERFLOW QUANTITY
Tolerance	+
cm3/1000 str. +: 0.1	+ Rated speed rpm : 2100
Shutoff solenoid	Overflow quantity
Volt : 12	+ ccm/10s : 97.2 + Tolerance
TIMING-DEVICE TRAVEL DIFFERENCE	+ ccm/10s + : 41.6
THE PERIOD INTACE DITTERMENT	+1.0
Rated speed rpm : 1500	Check tolerance
Del. quantity	+ ccm/10s +-: 55.5
cm3/1000 strokes : -1.2	+ Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 str. + : 0.1 Shutoff solenoid	+ Rated speed rpm : 600
Volt : 12	<pre>+ Rated speed rpm : 600 + Overflow quantity</pre>
16	ccm/10s : 63.8
	+ Tolerance
INJECTION-PUMP TEST SPECIFICATIONS	+ ccm/10s +-: 22.2
	† 2
TIMING DEVICE CHARACTERISTIC	+ Check tolerance
Rated speed rpm : 1790	ccm/10s +: 34.7 Shutoff solenoid
nateu specu i piii . 1170	Volt : 12
SV travel mm : 6.3	+
Tolerance mm +-: 0.4	DELIVERY AND BREAKAWAY CHARACTERISTIC
	1

Rated speed rpm Del. quantity	:	2400	+ Del. quantity + cm3/1000 strokes : 35.5
cm3/1000 strokes	:	12.0	† Tolerance
Tolerance		2.0	+ cm3/1000 str. +-: 0.5
cm3/1000 str. +- Check tolerance	•	2.0	+ Check tolerance + cm3/1000s. +-: 2.2
cm3/1000s. +-	:	4.0	+ Shutoff solenoid
Shutoff solenoid	_	12	† Volt : 12
Volt	•	12	Ī
Rated speed rpm	:	2300	
Del. quantity cm3/1000 strokes		22.0	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
Tolerance	•	22.0	+ CONTROL LEVER, IDEL STOP
cm3/1000 str. +-	:	5.0	Rated speed rpm : 415
Check tolerance cm3/1000s. +-	:	6.0	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	•		+ Tolerance
Volt	:	12	+ cm3/1000 str. +-: 1.5
Rated speed rpm	:	2600	+ Check tolerance + cm3/1000S. +-: 1.5
Del. quantity			+ Spread
cm3/1000 strokes Tolerance	:	3.0	- cm3/1000 strokes : 5.0
cm3/1000 str. +	:	3.0	+ FULL-LOAD STOP CONTROL LEVER
Check tolerance cm3/1000s. +		3.0	Roted around man /1E
Shutoff solenoid	•	3.0	+ Rated speed rpm : 415 + Del. quantity
Volt	:	12	+ cm3/1000 strokes : 1.5
Rated speed rpm		2100	+ Tolerance + cm3/1000 str. + : 1.5
Del. quantity			Spread
cm3/1000 strokes	:	29.5	- cm3/1000 strokes : 5.0
Tolerance cm3/1000 str. +-	:	1.0	+ Check tolerance + cm3/1000s. +-: 1.5
Check tolerance			+ Spread
cm3/1000s. +- Shutoff solenoid	:	2.2	- cm3/1000 strokes : 5.0
Volt	:	12	Ţ
		4050	+
Rated speed rpm Del. quantity	:	1850	RESIDUAL QUANTITY
cm3/1000 strokes	:	32.5	+
Tolerance cm3/1000 str. +-		3.0	+ Rated speed rpm : 490 + Del. quantity
Shutoff solenoid	•	3.0	- cm3/1000 strokes : 7.8
Volt	:	12	Tolerance
Rated speed rpm	:	600	+ cm3/1000 str. +-: 1.0 + Check tolerance
Del. quantity			+ cm3/1000s. $+$ : 2.5
cm3/1000 strokes Tolerance	:	33.3	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-	:	1.5	+
Check tolerance		7.0	+
cm3/1000s. +- Shutoff solenoid	:	3.0	CHECKING LOAD-DEPENDENT
Volt	:	12	START OF DELIVERY
Datad spaced rom		1250	+ DELIVERY DIFFERENCE
Rated speed rpm	:	ובטט	T DELIVER! DIFFERENCE
			•

Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance	:	-10.5	
cm3/1000 str. +-	:	3.0	
Check tolerance cm3/1000s. +-		4.0	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1500	
Del. quantity cm3/1000 strokes	:	-1.2	
Tolerance cm3/1000 str. +-	:	0.1	
Check tolerance cm3/1000s. +-		0.1	
Shutoff solenoid Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm	:	1500	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 str. +-	:	1.5	
Check tolerance cm3/1000s. +-		1.5	
Shutoff solenoid Volt	:	12	
PRESSURE DIFFEREN	CE		
Rated speed rpm Supply pomp	:	1500	
pressure bar Tolerance bar +-	:	-1.0 0.2	
Shutoff solenoid Volt		12	
TIMING-DEVICE TRA	:		
ITUITING DEVICE IN	VCL	DIFFERENCE	
Rated speed rpm Tolerance mm +-	:	1500 0.2	
Check tolerance mm +-	:	0.6	
Shutoff solenoid Volt	:	12	
START TRANSITION			
Del. quantity	:	380	
cm3/1000 strokes Tolerance	:	27.0	
		10 0	

Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity	:	180
cm3/1000 strokes Tolerance	:	60.0
cm3/1000 str. +	:	25.0
Shutoff solenoid Volt	:	12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,8
Tolerance mm + : +0,2
Dimension MS mm : 1,4
Tolerance mm + : +0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control Lever

position YB mm : 60,5..71,5

End of test-specification sheet

cm3/1000 str. + : 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 05.03.96 Edition : ISO 4113 Test oil

Part: no. : 0 460 403 015 Pump designation : VE3/10F1500L481

Customer-spec. information Customer : VM

: HR 394 HT Motor Power KW 51.0

## TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde : 1 688 901 022

Opening pressure

bar 130 Tolerance bar + :

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm Aneroid pressure	:	1200
hPa	:	1000
Setting mm Tolerance mm +	:	2.6 0.2
Shutoff solenoid Volt	:	12

## SUPPLY PUMP PRESSURE

Rated speed rpm	:	1200
Aneroid pressure hPa	:	1000
Supply pomp		
pressure bar	:	5.9
Tolerance bar +- Shutoff solenoid	:	0.3
Volt	:	12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1200
Aneroid pressure		
hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	67.5
Tolerance		
cm3/1000 str. +	•	0.5
Spread		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000S.	:	4.0
Shutoff solenoid		
Volt	:	12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	600
Del. quantity cm3/1000 strokes	:	59.5
Tolerance cm3/1000 str. +- Shutoff solenoid	:	0.5
Volt Check tolerance	•	12
cm3/1000s.	:	4.0

#### IDLE SETTING

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	12.5
Tolerance cm3/1000 str. +-		2.0
Shutoff solenoid	٠	۷.۱
Volt	:	17

Spread	+	Del. quantity		
	3.5	cm3/1000 strokes	: -0.	0
Check tolerance	3.5	Tolerance	• 0.	/
	7.5			1
cm3/1000s. :	3.5	cm3/1000 str. +-	: 0.	7
	+	Shutoff solenoid		
	<del>-</del>	Volt	: 1	2
	1			_
	1			
FULL-LOAD SPEED REGULATION	na i	INJECTION-PUMP TES	T CDECTET	CATTONC
TOLE EOND OF ELD REGOLATIO	^ <b>*</b>	TIAGECI TOM-LOUIL 152	1 SECTLI	CALTONS
5 45 4 50 5 54 50 5	·o †			
Rated speed rpm : 157		TIMING DEVICE CHAR	ACTERISTI	. C
	1000 +			
Del. quantity	+	Rated speed rpm	: 1500	
cm3/1000 strokes : 5	50.0	Aneroid pressure		
Tolerance	1	hPa	: 100	מר
	3.0 ↓	4	• 100	
Shutoff solenoid	7	Cli though mm	. 7	٥
	12	SV travel mm	: 3.	
Volt :	12 +	Tolerance mm +	: 0.	4
	+	Check		
STARTING FUEL DELIVERY	+	tolerance mm +-	: 0.	7
	+	Shutoff solenoid		
Rated speed rpm : 10	10	Volt	: 1	2
Del. quantity	1		•	_
	35.0	Dated speed nom	: 1000	
	7		: 1000	
Tolerance	·	Aneroid pressure		
	25.0	hPa	: 100	IJ
Shutoff solenoid	+			
Volt :	12	SV travel mm	: 1.	7
	1	Tolerance mm +-	: 0.	4
	1	Check		•
	1	tolerance mm +	: 0.	7
	T			· f
I OAN DEDENINENT OTABT OF A	VELTATORY I	Churchaff calabaid		
LOAD-DEPENDENT START OF D	PELIVERY +	Shutoff solenoid		
LOAD-DEPENDENT START OF D SETTING	DELIVERY +	Shutoff solenoid Volt	: 1	2
SETTING	PELIVERY + + + + + + + + + + + + + + + + + + +	Volt		
	PELIVERY + + + + + + + + + + + + + + + + + + +			
SETTING	PELIVERY + + + + + + + + + + + + + + + + + + +	Volt		
SETTING DELIVERY DIFFERENCE	+ + + +	Volt SUPPLY PUMP PRESSU	RE CHARAC	
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120	+ + + +	Volt SUPPLY PUMP PRESSU Rated speed rpm	RE CHARAC	
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity	00	Volt SUPPLY PUMP PRESSU Rated speed rpm Aneroid pressure	RE CHARAC	CTERISTIC
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity  cm3/1000 strokes :	+ + + +	Volt SUPPLY PUMP PRESSU Rated speed rpm Aneroid pressure hPa	RE CHARAC	CTERISTIC
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity  cm3/1000 strokes :  Tolerance	7.0	Volt SUPPLY PUMP PRESSU Rated speed rpm Aneroid pressure hPa Supply pomp	RE CHARAC : 1500 : 100	CTERISTIC
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity  cm3/1000 strokes : -  Tolerance  cm3/1000 str. +-:	00	Volt SUPPLY PUMP PRESSU Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	RE CHARAC : 1500 : 100	CTERISTIC 00 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity cm3/1000 strokes :  Tolerance cm3/1000 str. +-: Shutoff solenoid	7.0	SUPPLY PUMP PRESSURATED Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARAC : 1500 : 100	CTERISTIC 00 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity  cm3/1000 strokes : -  Tolerance  cm3/1000 str. +-:	7.0	SUPPLY PUMP PRESSURATED Aneroid pressure hPa Supply pomp pressure bar Tolerance bar * Shutoff solenoid	RE CHARAC : 1500 : 100 : 7.	CTERISTIC 00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity cm3/1000 strokes :  Tolerance cm3/1000 str. +-: Shutoff solenoid	7.0	SUPPLY PUMP PRESSURATED Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARAC : 1500 : 100 : 7. : 0.	CTERISTIC 00 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity cm3/1000 strokes :  Tolerance cm3/1000 str. +-: Shutoff solenoid	7.0	SUPPLY PUMP PRESSURATED Aneroid pressure hPa Supply pomp pressure bar Tolerance bar * Shutoff solenoid	RE CHARAC : 1500 : 100 : 7. : 0.	CTERISTIC 00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120  Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-: Shutoff solenoid Volt :	7.0	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Shutoff solenoid Volt	RE CHARAC : 1500 : 100 : 7. : 0.	CTERISTIC 00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE	7.0 -7.0 1.0 12	Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Shutoff solenoid Volt Rated speed rpm	RE CHARAC : 1500 : 100 : 7. : 0.	CTERISTIC 00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120	7.0 -7.0 1.0 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure	RE CHARACE: 1500 : 1000 : 7. : 0. : 1500	CTERISTIC  00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure	7.0 1.0 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	RE CHARAC : 1500 : 100 : 7. : 0.	CTERISTIC  00 2 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1	7.0 -7.0 1.0 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp	RE CHARACE: 1500 : 1000 : 7. : 0. : 1500 : 1000	CTERISTIC  OO  2 3 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity	7.0 1.0 12 10 000	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	RE CHARACE: 1500 : 1000 : 7. : 0. : 1500 : 1000 : 4.	CTERISTIC  OO  2 3 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-: Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : -	7.0 1.0 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4.	CTERISTIC  OO  2 3 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity	7.0 1.0 12 10 000	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	RE CHARACE: 1500 : 1000 : 7. : 0. : 1500 : 1000 : 4.	CTERISTIC  OO  2 3 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-: Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance	7.0 1.0 12 10 000	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-: Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-:	00	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2 OO  1 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid	00 -7.0 1.0 12 00 000 -0.2 0.1	Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar Tolerance bar Tolerance bar Shutoff solenoid Volt	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2 OO  1 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-: Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. +-:	00	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2 OO  1 3
DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hpa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :	00 -7.0 1.0 12 00 000 -0.2 0.1 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar OVERFLOW QUANTITY	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2 OO  1 3
SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid	00 -7.0 1.0 12 00 000 -0.2 0.1 12	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	CTERISTIC  OO  2 3 2 OO  1 3
DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  TIMING-DEVICE TRAVEL DIFF	00	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 4. : 0. : 1500	TERISTIC  200 23 200 13 2
DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hpa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :	00	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 1000 : 4. : 0.	TERISTIC  200 23 200 13 2
DELIVERY DIFFERENCE  Rated speed rpm : 120 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : 120 Aneroid pressure hPa : 1 Del. quantity cm3/1000 strokes : - Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  TIMING-DEVICE TRAVEL DIFF	00	SUPPLY PUMP PRESSUR Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance bar Tolerance bar Tolerance bar Aneroid pressure hPa Supply pomp pressure bar Tolerance bar	RE CHARACE: 1500 : 100 : 7. : 0. : 1500 : 4. : 0. : 1500	TERISTIC  200 23 200 13 2

Overflow quantity ccm/10s : 97.2	+ Shutoff solenoid + Volt : 12
Tolerance ccm/10s + : 41.6	Rated speed rpm : 1500
Check tolerance	+ Aneroid pressure + hPa : 1000
ccm/10s +-: 41.6 Shutoff solenoid Volt : 12	+ Del. quantity + cm3/1000 strokes : 65.5 - Tolerance
Rated speed rpm : 750	cm3/1000 str. + : 1.5 Check tolerance
Aneroid pressure hPa : 1000	cm3/1000s. + : 3.0 Shutoff solenoid
Overflow quantity ccm/10s : 62.5	+ Volt : 12
Tolerance ccm/10s +-: 20.8	Rated speed rpm : 750 Del. quantity
Check tolerance	+ cm3/1000 strokes : 57.5 + Tolerance
ccm/10s + : 20.8 Shutoff solenoid	cm3/1000 str. + : 2.0 Shutoff solenoid
Volt : 12	+ Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTIC	Rated speed rpm : 750 Amercid pressure
Rated speed rpm : 1570 Aneroid pressure	+ hPa : 1000 - Del. quantity
hPa : 1000 Del. quantity	+ cm3/1000 strokes : 68.0 + Tolerance
<pre>cm3/1000 strokes : 50.0 Tolerance cm3/1000 str. +- : 3.0</pre>	+ cm3/1000 str. + : 1.5 + Check tolerance + cm3/1000s. + : 3.0
Check tolerance	+ Shutoff solenoid
cm3/1000s. +-: 6.5 Shutoff solenoid Volt: 12	+ Volt : 12
Rated speed rpm : 1670	+ Rated speed rpm : 1200 + Aneroid pressure + hPa : 1000
Aneroid pressure  hPa : 1000	Del. quantity
Del. quantity cm3/1000 strokes : 1.5	+ Tolerance + cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. + : 1.5	Check tolerance cm3/1000s. +-: 3.0
Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
Rated speed rpm : 750	+
Aneroid pressure hPa : 350	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
LDA/ HBA stroke mm : 5.0	Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 62.0	Del. quantity cm3/1000 strokes : 1.5
Tolerance cm3/1000 str. +-: 0.5	+ Tolerance + cm3/1000 str. + : 1.5
Check tolerance cm3/1000s. +-: 3.0	+ Check tolerance + cm3/1000s. +-: 1.5
	I

Spread cm3/1000 strokes : 5.0	+ Rated speed rpm : 1200 + Del. quantity
FULL-LOAD STOP CONTROL LEVER	+ cm3/1000 strokes : -0.9
	+ Tolerance + cm3/1000 str. +-: 0.1
Rated speed rpm : 400 Del. quantity	+ Check tolerance + cm3/1000s. +-: 0.1
cm3/1000 strokes : 1.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. ←: 1.5 Spread	+ DELIVERY DIFFERENCE
cm3/1000 strokes : 5.0 Check tolerance	+ Rated speed rpm : 1200
cm3/1000s. +-: 1.5 Spread	Del. quantity cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0	+ Tolerance
IDLE DELIVERY	cm3/1000 str. +: 2.0 Shutoff solenoid
Reted speed rpm : 440	+ Volt : 12
Del. quantity cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance cm3/1000 str. + : 3.0	+ Rated speed rpm : 1200
Check tolerance	+ SV travel mm : -1.7
cm3/1000s. +-: 4.0 Shutoff solenoid	Tolerance mm +: 0.4 Shutoff solenoid
Volt : 12	+ Volt : 12
Rated speed rpm : 550 Del. quantity	+ START TRANSITION
cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 450
cm3/1000 str. +-: 1.5 Check tolerance	Del. quantity
cm3/1000s. ←: 1.5	cm3/1000 strokes : 60.0
Shutoff solenoid Volt : 12	+ cm3/1000 str. + : 10.0 + Shutoff solenoid
	+ Volt : 12 +
	+ Rated speed rpm : 250
	+ Del. quantity
CHECKING LOAD-DEPENDENT START OF DELIVERY	cm3/1000 strokes : 85.0 Tolerance
DELIVERY DIFFERENCE	+ cm3/1000 str. +-: 25.0 + Shutoff solenoid
Rated speed rpm : 1200	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : -16.0 Tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 str. +-: 4.0 Check tolerance	LDA/
cm3/1000s. +-: 4.0 Shutoff solenoid	+ HBA stroke mm : 5.0 - Dimension K mm : 3.3
Volt : 12	Tolerance mm + : +-0,1
TIMING-DEVICE TRAVEL DIFFERENCE	+ Dimension KF mm : 6,0, + Tolerance mm + : +-0,2
	+ Dimension MS mm : 0.8

Tolerance mm +-: +-0,2

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.12.95 Test oil : ISO 4113

: 0 460 404 075 Part no. Pump designation: VE4/10F2100L503

Customer-spec. information : VM Customer

: HR 425 SLIRF Motor 90.0 Power KW

TEST BENCH REQUIREMENTS

Over flow

restriction mm 0.75

0.35 Inlet press. bar : 0.05 Tolerance bar + :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar + :

: 1 680 750 073 Test Lines

Outside diameter : 6.00

x inside diameter : 2.00 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

500 Rated speed rpm :

Aneroid pressure

hPa 1000

7.7 Setting mm Tolerance mm +: 0.2 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

500 Rated speed rpm : Aneroid pressure 1000 hPa Supply pomp

5.9 pressure bar Tolerance bar + : 0.3Shutoff solenoid

Volt 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1500

Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes : 66.0 Tolerance

cm3/1000 str. +: 0.5 Spread

cm3/1000 strokes : 3.0 Check tolerance

cm3/1000s.

3.0

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

700 Rated speed rpm : Del. quantity

42.0 cm3/1000 strokes :

Tolerance

cm3/1000 str. + :0.5 Shutoff solenoid 12 Volt

Check tolerance cm3/1000s.3.0

IDLE SETTING

Rated speed rpm 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid Volt

12

Spread

cm3/1000 strokes : 3.0

Check tolerance

3.0 cm3/1000s.

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+	- Check
<del> </del>	- tolerance mm + : 0.5
FULL-LOAD SPEED REGULATION	- Shutoff solenoid
<del> </del>	- Volt : 12
Rated speed rpm : 2300	-
Pressure hPa : 1000	- Timing device
Del. quantity	- solenoid Volt : 100
cm3/1000 strokes : 38.0	
Tolerance	- Rated speed rpm : 1000
cm3/1000 str. +: 3.0	- Aneroid pressure
Shutoff solenoid	- hPa : 1000
Volt : 12	<u>-</u>
†	- SV travel mm : 9.0
STARTING FUEL DELIVERY	- Tolerance mm + : 0.5
†	- Check
Rated speed rpm : 100	tolerance mm + : 0.7
Del. quantity	- Shutoff solenoid
cm3/1000 strokes : 65.0	- Volt : 12
Tolerance	•
cm3/1000 str. +: 17.0	- Rated speed rpm : 1000
Shutoff solenoid	- Aneroid pressure
Volt : 12	- hPa : 1000
†	-
†	- SV travel mm : 0.3
<del> </del>	- Tolerance mm +: 0.3
†	- Check
TAMECTION DIME TECT SECRET CATTONS	tolerance mm +-: 0.3
INJECTION-PUMP TEST SPECIFICATIONS	- Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	- Volt : 12
ITHING DEVICE CHARACTERISTIC	- - Timing device
Rated speed rpm : 2100	
	colengia Volt • 100
, ,	- solenoid Volt : 100
Aneroid pressure	-
, ,	- solenoid Volt : 100 - - SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure hPa : 1000	- SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure hPa : 1000  SV travel mm : 9.8	SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 2100
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +-: 0.5	SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 2100 Aneroid pressure
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check	SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 2100 Aneroid pressure hPa : 1000
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +-: 0.5 Check tolerance mm +-: 0.7	SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +-: 0.5 Check tolerance mm +-: 0.7	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +: 0.5 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +: 0.5 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar + : 0.8
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +: 0.5 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm +: 1.8 Check tolerance mm +: 1.8 Shutoff solenoid Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar + : 0.8 Shutoff solenoid Volt : 12
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar + : 0.8 Shutoff solenoid
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +: 0.5 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm +: 1.8 Check tolerance mm +: 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Aneroid pressure Aneroid pressure	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Aneroid pressure Aneroid pressure Rated speed rpm : 1000 Aneroid pressure
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm +: 0.5 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm +: 1.8 Check tolerance mm +: 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Aneroid pressure hPa : 1000
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Aneroid pressure Aneroid pressure Rated speed rpm : 1000 Aneroid pressure
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 2100 Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Aneroid pressure hPa : 1000
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Supply pomp Aneroid pressure hPa : 1000 Aneroid pressure hPa : 1000 Supply pomp
Aneroid pressure hPa : 1000  SV travel mm : 9.8 Tolerance mm + : 0.5 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000  SV travel mm : 5.5 Tolerance mm + : 1.8 Check tolerance mm + : 1.8 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 2100 Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 150 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.8 Tolerance bar +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1000 Supply pomp Aneroid pressure hPa : 1000 Supply pomp Supply pomp : 1000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.5

Shutoff solenoid		4	- Tolerance			
Volt	•	12	- cm3/1000 str. +-		0.5	
	•		- Check tolerance	•	0.5	
OVERFLOW QUANTITY			- cm3/1000s. $+$		2.5	
OVERIEUM GOMINITII		7		•	2.5	
Data di 1	700	7	Shutoff solenoid		40	
Rated speed rpm	: 700	-	- Volt	:	12	
Aneroid pressure		+	-			
hPa	: 10	00 -	- Rated speed rpm	:	2100	
Overflow quantity		-	- Aneroid pressure			
ccm/10s	: 83	.3	- hPa	:	1000	
Tolerance		· ·	- Del. quantity	•		
ccm/10s +-	: 55	5	- cm3/1000 strokes		63.5	
	. ,,		- Tolerance	•	05.5	
Check tolerance			- cm $3/1000$ str. $+$		1.5	
		<u>,                                     </u>		•	1.5	
ccm/10s +-	: 55	.5	Check tolerance			
Shutoff solenoid			- cm3/1000s. $+$	:	3.0	
Volt	:	12	- Shutoff solenoid			
		-	- Volt	:	12	
Rated speed rpm	: 2100	4	-			
Aneroid pressure		4	- Rated speed rpm	:	700	
hPa	: 100	nn -	- Aneroid pressure	-	_	
Overflow quantity			hPa		1000	
ccm/10s	: 111	1	- Del. quantity	•	, 000	
Tolerance	• '''	• •	cm3/1000 strokes		69.0	
ccm/10s +-	: 55	5	Tolerance	•	07.0	
CCIII/ IUS +-		• 3		_	1 5	
Observation Andrews		7	- cm3/1000 str. +	:	1.5	
Check tolerance			Check tolerance		7.0	
ccm/10s +-	: 55	.5	- cm3/1000s. $+-$	:	3.0	
Shutoff solenoid		-	- Shutoff solenoid			
Volt	:	12	- Volt	:	12	
		+	-			
DELIVERY AND BREA	KAWAY CHAI	RACTERISTIC -	- Rated speed rpm	:	1500	
DELIVERY AND BREA	KAWAY CHAI	RACTERISTIC -	Rated speed rpm Aneroid pressure	:	1500	
	KAWAY CHAI	-		:	1500 1000	
Rated speed rpm		-	Aneroid pressure hPa	:		
Rated speed rpm Aneroid pressure	: 2300	4	Aneroid pressure hPa Del. quantity	:	1000	
Rated speed rpm Aneroid pressure hPa		4	Aneroid pressure hPa Del. quantity cm3/1000 strokes	:		
Rated speed rpm Aneroid pressure hPa Del. quantity	: 2300 : 100	00 -	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	:	1000 66.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 2300	00 -	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	1000	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 2300 : 100 : 38	.0	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	1000 66.0 0.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 2300 : 100 : 38	00 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	1000 66.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 2300 : 100 : 38 : 3	.0 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	1000 66.0 0.5 2.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2300 : 100 : 38 : 3	.0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	1000 66.0 0.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: 2300 : 100 : 38 : 3 : 4	.0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	1000 66.0 0.5 2.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 2300 : 100 : 38 : 3 : 4	.0 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	1000 66.0 0.5 2.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2300 : 100 : 38 : 3 : 4	.0 .0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	:	1000 66.0 0.5 2.0	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	: 2300 : 100 : 38 : 3 : 4	.0 .0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1C00 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF	: : : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: 2300 : 100 : 38 : 3 : 4 : 2460	.0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: 2300 : 100 : 38 : 3 : 4	.0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID	: : : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100	00 - .0 - .0 - .0 - 12 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100	.0 .0 .0	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID	: :	1000 66.0 0.5 2.0 12 STOP 450	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100	00 - .0 - .0 - .0 - 12 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm	: :	1000 66.0 0.5 2.0 12	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7	00 - .0 - .0 - .0 - 12 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity	: :	1000 66.0 0.5 2.0 12 STOP 450	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Äneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7	00 - .0 - .0 - .0 - .12 - .5 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes	: : :	1000 66.0 0.5 2.0 12 STOP 450	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +-	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4	00 - .0 - .0 - .0 - .12 - .00 - .5 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4	00 - .0 - .0 - .0 - .12 - .5 -	Aneroid pressure hPa  Del. quantity cm3/1C00 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4	00 - .0 - .0 - .0 - .12 - .5 - .0 -	Aneroid pressure hPa  Del. quantity cm3/1C00 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4	00 - .0 - .0 - .0 - .12 - .5 - .0 -	Aneroid pressure hPa  Del. quantity cm3/1C00 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4 : 700	00 .0 .0 .0 .12	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Aneroid pressure cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4 : 700	00 - .0 - .0 - .0 - .12 - .5 - .0 -	Aneroid pressure hPa  Del. quantity cm3/1C00 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4 : 700 : 40	00 - .0 - .0 - .0 - .12 - .0 - .12 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +  IDLE DELIVERY	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5 1.5	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Aneroid pressure cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: 2300 : 100 : 38 : 3 : 4 : 2460 : 100 : 7 : 4 : 700 : 40	00 - .0 - .0 - .0 - .12 - .0 - .12 -	Aneroid pressure hPa  Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : :	1000 66.0 0.5 2.0 12 STOP 450 1.5	

Del. quantity cm3/1000 strokes Tolerance	:	4.0	
cm3/1000 str. +- Check tolerance	:	2.5	
cm3/1000s. +- Shutoff solenoid	:	4.0	
Volt	•	12	
Rated speed rpm Del. quantity	:	500	
cm3/1000 strokes Tolerance	:	6.0	
cm3/1000 str. +-	:	2.5	
Check tolerance cm3/1000s. +-	:	5 <b>.0</b>	
Shutoff solenoid Volt	:	12	
EXHAUST-GAS RECIR	CUL A		······································
Rated speed rpm Aneroid pressure	:	1000	
hPa Del. quantity	;	1000	
cm3/1000 strokes Tolerance	:	50.0	
cm3/1000 str. +- Check tolerance	:	1.0	
cm3/1000s. +- Shutoff solenoid	:	2.5	
Volt	:	12	
START TRANSITION			
Rated speed rpm	:	550	
Del. quantity cm3/1000 strokes	:	40.0	
Tolerance cm3/1000 str. +	:	10.0	
Shutoff solenoid Volt	:	12	
Rated speed rpm Del. quantity	:	400	
cm3/1000 strokes Tolerance	:	65.0	
cm3/1000 str. +- Shutoff solenoid	:	17.0	
Volt	:	12	

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm Tolerance mm + Dimension KF mm Tolerance mm + KSB travel mm	: 3,7 : +-0,1 : 5,2 : +-0,2 : 8,5
POTENTIOMETER SET	
<ol> <li>measurement</li> <li>voltage Volt</li> <li>measurement</li> <li>voltage Volt</li> </ol>	: 5,0 : 2,31
MICROSWITCH SET	
mm	: ARF 12,0

CONTROL LEVER POSITION

Control lever

SET

position YA mm : 43.2..45,2

Control lever

position YB mm : 23,5..30,5

adjustment instru See microcard(s)	
Edition Test oil	: 04.04.95 : ISO 4113
Part no. Pump designation	: 0 460 404 083 : VE4/10F2100L503-
Customer—spec. ir Customer Motor Power KW	nformation : VM : HR 425 SLIRF : 85.0
TEST BENCH REQUIR	REMENTS
Calibrating-oil return temperature °C Tolerance °C +	: 45 -: 1
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +	: 0.35 -: 0.05
Test nozzle holde assembly	: : 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 -: 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x Length mm	2.00 : 450
REMARKS	

TIMING	DEVI	E T	RAVEL	
Rated			:	

Aneroid pressure
hPa : 1000

Setting mm : 7.7
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

500

## SUPPLY PUMP PRESSURE

:	500
:	1000
:	5.9
:	0.3
:	12
	: : : : : : : : : : : : : : : : : : : :

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	66.0
Tolerance		
cm3/1000 str. +	:	0.5
Spread		
cm3/1000 strokes	:	3.0
Check tolerance		
cm3/1000s.	÷	3.0
Shutoff solenoid		
Volt	:	12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm Del. quantity	:	700
cm3/1000 strokes	:	42.0
Tolerance cm3/1000 str. +-	:	0.5
Shutoff solemoid Volt	:	12
Check tolerance cm3/1000s.	:	3.0

## IDLE SETTING

Rated speed rpm	:	450
Del. quantity cm3/1000 strokes	:	12.0
Tolerance cm3/1000 str. +-	:	2.0
Shutoff solenoid Volt	;	12

Spread cm3/1000 strokes : 3.0 Check tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000s. : 3.0	SV travel mm : 0.5 Tolerance mm +-: 0.5 Check
	tolerance mm +: 0.5 Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 2300 Pressure hPa : 1000 Del. quantity	Timing device solenoid Volt : 100
cm3/1000 strokes : 38.0 Tolerance	Rated speed rpm : 1000 Aneroid pressure
cm3/1000 str. +-: 3.0 Shutoff solenoid	hPa : 1000
Volt : 12	SV travel mm : 9.0 Tolerance mm +-: 0.5
STARTING FUEL DELIVERY	+ Check + tolerance mm +-: 0.7
Rated speed rpm : 100 Del. quantity	+ Shutoff solenoid + Volt : 12
cm3/1000 strokes : 65.0 Tolerance	+ Rated speed rpm : 1900
cm3/1000 str. + : 17.0 Shutoff solenoid	+ Aneroid pressure + hPa : 1000
Volt : 12	+ SV travel mm : 0.3 + Tolerance mm + : 0.3 + Check
	<pre>+ tolerance mm + : 0.3 + Shutoff solenoid</pre>
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100	Timing device solenoid Volt : 100
Aneroid pressure hPa : 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC
SV travel mm : 9.8	Rated speed rpm : 2100 Aneroid pressure
Tolerance mm + : 0.5 Check	hPa : 1000 Supply pomp
tolerance mm +-: 0.7 Shutoff solenoid	+ pressure bar : 8.0 + Tolerance bar + : 0.3
Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 150 Aneroid pressure	Rated speed rpm : 150
hPa : 1000	Aneroid pressure hPa : 1000
SV travel mm : 5.5 Tolerance mm +-: 1.8	Supply pomp + pressure bar : 4.8
Check tolerance mm + : 1.8 Shutoff solenoid	Tolerance bar +-: 0.8 Shutoff solenoid Volt : 12
Volt : 12	+
Rated speed rpm : 2100	+ Rated speed rpm : 1000 +

C03

Aneroid pressure		+	Rated speed rpm	:	700
hPa :	1000	+	Aneroid pressure		
Supply pomp		+	hPa	:	400
pressure bar :	6.5	1			,
Tolerance bar +-:	0.3	1	LDA/		
Shutoff solenoid	0.0	1	HBA stroke mm	•	6.7
Volt :	12	T		•	0.7
,	12	T	Del. quantity	_	<b>5</b> 7 0
OVERE OUR OURNITATY		Ť	cm3/1000 strokes	:	54.0
OVERFLOW QUANTITY		†	Tolerance		<b>.</b> -
~		†	cm3/1000 str. +-	:	0.5
Rated speed rpm : 2	.100	+	Check tolerance		
Aneroid pressure		+	cm3/1000s. +-	:	2.5
hPa :	1000	+	Shutoff solenoid		
Overflow quantity		+	Volt	:	12
	111.1	+			
Tolerance		Ţ	Rated speed rpm	:	2100
ccm/10s +-:	55.5	1	Aneroid pressure	•	2.55
		1	hPa	•	1000
Check tolerance		1	Del. quantity	•	1000
ccm/10s +-:	55.5	Ŧ	cm3/1000 strokes		63.5
Shutoff solenoid	33.3	T		•	03.5
	42	†	Tolerance		A F
Volt :	12	†	cm3/1000 str. +	:	1.5
		+	Check tolerance		
	700	+	cm3/1000s. +-	:	3.0
Aneroid pressure		+	Shutoff solenoid		
hPa :	1000	+	Volt	:	12
Overflow quantity		+			
ccm/10s :	83.3	1	Rated speed rpm	:	700
Tolerance		1	Aneroid pressure	•	
ccm/10s +-:	55.5	1	hPa	•	1000
	33.3	1	Del. quantity	•	1500
Check tolerance		T	cm3/1000 strokes		69.0
	55.5	Ţ		•	69.0
	55.5	T	Tolerance		4 5
Shutoff solenoid	40	+	cm3/1000 str. +-	:	1.5
Voit :	12	†	Check tolerance		
		+	cm3/1000s. +-	:	3.0
DELIVERY AND BREAKAWAY	CHARACTERISTIC	+	Shutoff solenoid		
		+	Volt	:	12
Rated speed rpm : 2	300	+			
Aneroid pressure		+	Rated speed rpm	:	1500
hPa :	1000	+	Aneroid pressure		
Del. quantity		+	hPa	:	1000
cm3/1000 strokes :	38.0	1	Del. quantity	-	
Tolerance	· -	1	cm3/1000 strokes	•	66.0
cm3/1000 str. +-:	3.0	1	Tolerance	-	
Check tolerance	2.5	1	cm3/1000 str. +-	•	0.5
cm3/1000s. +-:	4.0	$\perp$	Check tolerance	•	0.5
Shutoff solenoid	<b>→.</b> ∪	Ι	cm3/1000s. +-		2.0
	42	T		•	2.0
Volt :	12	†	Shutoff solenoid		40
-	1.40	†	Volt	:	12
	460	+			
Aneroid pressure		†			
hPa :	1000	+	<del></del>		
Del. quantity		+	ELECTR. SHUTOFF		
cm3/1000 strokes :	7.5	+	CONTROL LEVER, IDL	E ST	TOP
Check tolerance		+	<b>,</b>	- '	
cm3/1000s. +-:	4.0	+	Rated speed rpm	:	450
Shutoff solenoid	· · -	1	Del. quantity	•	
Volt :	12	1	cm3/1000 strokes	•	1.5
	i har	T	SHOT TOUG SETURES	•	1.5
		T			

Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 1.5	+ Shutoff solenoid + Volt : 12 + START TRANSITION
Spread cm3/1000 strokes : 5.0	Rated speed rpm : 550
FULL-LCAD STOP CONTROL LEVER	Del. quantity - cm3/1000 strokes : 40.0
	+ Tolerance
Rated speed rpm : 450 Del. quantity	+ cm3/1000 str. +-: 10.0 + Shutoff solenoid
cm3/1000 strokes : 1.5 Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.5 Spread	Rated speed rpm : 400
cm3/1000 strokes : 5.0 Check tolerance	Del. quantity cm3/1000 strokes : 65.0
cm3/1000s. + : 1.5	+ Tolerance
Spread cm3/1000 strokes : 5.0	+ cm3/1000 str. +-: 17.0 - Shutoff solenoid
IDLE DELIVERY	+ Volt : 12
Rated speed rpm : 800 Del. quantity	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : 4.0 Tolerance	LDA/
cm3/1000 str. +-: 2.5 Check tolerance	HBA stroke mm : 6.7 Dimension K mm : 3,3
cm3/1000s. +-: 4.0	+ Tolerance mm + : +-0,1
Shutoff solenoid Volt : 12	Dimension KF mm : 5,4 Tolerance mm + : +-0,2
Rated speed rpm : 500	+ Dimension MS mm : 0,8 + Tolerance mm +-: +-0,2
Del. quantity cm3/1000 strokes : 6.0	POTENTIOMETER
Tolerance cm3/1000 str. +-: 2.5	+ SET +
Check tolerance cm3/1000s. +-: 5.0	+ 1. measurement + voltage Volt : 5,0
Shutoff solenoid Volt : 12	1. measurement voltage Volt : 2,31
	MICROSWITCH SET
	: ARF 12,0
EXHAUST-GAS RECIRCULATION	CONTROL LEVER POSITION
Rated speed rpm : 1000	+ SET +
Aneroid pressure hPa : 1000	Control lever
Del. quantity cm3/1000 strokes : 50.0	position YA mm : 43,245,2
Tolerance cm3/1000 str. +- : 1.0 Check tolerance	control lever position YB mm : 23,530,5
cm3/1000s. +-: 2.5	<del>-</del>

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.06.93 : ISO 4113 Test oil

: 0 460 414 101 Part no. Pump designation: VE4/11F1900L519

Customer-spec, information Customer : PENTA : TAMD 31 Motor Power KW 96.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm 840

REMARKS

#### BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.3Tolerance mm +-:+-0.02

Check

tolerance mm +-:+-0.04

## INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Setting mm 2.0 Tolerance mm 0.2

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Supply pomp

pressure bar 6.7 Tolerance bar + : 0.3

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 57.0 Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 5.0

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 650

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. +-: 0.5

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 6.0

C07

Check tolerance cm3/1000s. : 6.0	+ Aneroid pressure + hPa : 1000
•	+ Supply pomp
	pressure bar : 4.1
	Tolerance bar +-: 0.3
	+
FULL-LOAD SPEED REGULATION	+ OVERFLOW QUANTITY
	+
Rated speed rpm : 2150	+ Rated speed rpm : 650
Pressure hPa : 1000	+ Overflow quantity
Del. quantity	+ ccm/10s : 63.8
cm3/1000 strokes : 22.0	+ Tolerance
Tolerance	+ ccm/10s + : 22.2
cm3/1000 str. + : 3.0	Charle to Language
STARTING FUEL DELIVERY	+ Check tolerance + ccm/10s + : 22.2
STARTING FUEL DELIVERT	+ ccm/10s + : 22.2
Rated speed rpm : 100	T Rated speed rpm : 1900
Del. quantity	- Aneroid pressure
cm3/1000 strokes : 45.0	hPa : 1000
Tolerance	Overflow quantity
cm3/1000 str. +-: 25.0	+ ccm/10s : 97.2
	+ Tolerance
	- ccm/10s +: 41.6
	+
	+ Check tolerance
	+ ccm/10s + : 41.6
INJECTION-PUMP TEST SPECIFICATIONS	+
	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHARACTERISTIC	i
THING DEVICE CHARACTERISTIC	†
	Rated speed rpm : 2150
Rated speed rpm : 1900	+ Aneroid pressure
Rated speed rpm : 1900 Aneroid pressure	Aneroid pressure + hPa : 1000
Rated speed rpm : 1900	Aneroid pressure hPa: 1000 Del. quantity
Rated speed rpm : 1900 Aneroid pressure hPa : 1000	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm +-: 0.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm +-: 0.4 Check	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm +-: 0.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0  Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0  Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0  Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7	Aneroid pressure hPa : 1000  Del. quantity cm3/1000 strokes : 22.0  Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5  Rated speed rpm : 900
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5  Rated speed rpm : 900  Aneroid pressure
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure	Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 22.0  Tolerance  cm3/1000 str. + : 3.0  Check tolerance  cm3/1000s. + : 4.0  Rated speed rpm : 2250  Aneroid pressure  hPa : 1000  Del. quantity  cm3/1000 strokes : 1.5  Tolerance  cm3/1000 str. + : 1.5  Check tolerance  cm3/1000s. + : 1.5  Rated speed rpm : 900
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure hPa : 1000	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Rated speed rpm : 900 Aneroid pressure hPa : 300
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure hPa : 1000 Supply pomp	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Rated speed rpm : 900 Aneroid pressure hPa : 300  LDA/
Rated speed rpm : 1900  Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  Rated speed rpm : 900 Aneroid pressure hPa : 300  LDA/ HBA stroke mm : 7,5
Rated speed rpm : 1900 Aneroid pressure hPa : 1000  SV travel mm : 4.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure hPa : 1000 Supply pomp	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  Rated speed rpm : 900 Aneroid pressure hPa : 300  LDA/ HBA stroke mm : 7,5 Del. quantity
Rated speed rpm : 1900  Aneroid pressure hPa : 1000  SV travel mm : 4.4  Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 1700 Aneroid pressure hPa : 1000  SV travel mm : 3.1 Tolerance mm + : 0.5 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 8.0 Tolerance bar + : 0.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  Rated speed rpm : 900 Aneroid pressure hPa : 300  LDA/ HBA stroke mm : 7,5
Rated speed rpm : 1900  Aneroid pressure hPa : 1000  SV travel mm : 4.4  Tolerance mm + : 0.4  Check tolerance mm + : 0.7  Rated speed rpm : 1700  Aneroid pressure hPa : 1000  SV travel mm : 3.1  Tolerance mm + : 0.5  Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1900  Aneroid pressure hPa : 1000  Supply pomp pressure bar : 1000  Supply pomp pressure bar : 8.0  Tolerance bar + : 0.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0  Rated speed rpm : 2250 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5  Rated speed rpm : 900 Aneroid pressure hPa : 300  LDA/ HBA stroke mm : 7,5 Del. quantity cm3/1000 strokes : 47.0

Check tolerance cm3/1000s. +-:	3.0	+	Rated speed rpm Del. quantity		300
Rated speed rpm :	1900	‡	cm3/1000 strokes Tolerance		1.5
Aneroid pressure hPa :	1000	<b>†</b>	cm3/1000 str. +- Check tolerance	:	1.5
Del. quantity cm3/1000 strokes :	55.0	1	cm3/1000s. +- Spread	:	1.5
Tolerance cm3/1000 str. +-:	1.5	1	cm3/1000 strokes Shutoff solenoid	:	5.0
Check tolerance cm3/1000s. +-:	3.0	<u> </u>	Volt	:	12
Rated speed rpm :	1200	1	IDLE DELIVERY		
Aneroid pressure		+	TOCC VCCIVCINI		
hPa : Del. quantity	1000	‡	Rated speed rpm Del. quantity	:	400
cm3/1000 strokes : Tolerance	58.5	1	cm3/1000 strokes Tolerance	:	1.5
cm3/1000 str. +:	2.5	+	cm3/1000 str. +- Check tolerance	:	1.5
Rated speed rpm : Aneroid pressure	750	I	cm3/1000s. +	:	1.5
hPa : Del. quantity	1000	<u>†</u>	Rated speed rpm Del. quantity	:	250
cm3/1000 strokes : Tolerance	58.5	+	cm3/1000 strokes Tolerance	:	23.0
cm3/1000 str. +-:	2.5	Ŧ	cm3/1000 str. +-	:	6.0
Rated speed rpm : Aneroid pressure	1500	Ī			
hPa : Del. quantity	1000	<u> </u>			
cm3/1000 strokes : Tolerance	57.0	+	START TRANSITION		
cm3/1000 str. +-:	0.5	Ţ	STAKE TRANSTITON		
Check tolerance	2.5	+	Rated speed rpm	:	500
cm3/1000s. +-:	2.5		Del. quantity cm3/1000 strokes	:	35.0
ARTOLIAN TO ALL OLD TO THE		+	Tolerance		45.0
MECHANICAL SHUTOFF		‡	cm3/1000 str. ←	:	15.0
Rated speed rpm : Aneroid pressure	1900	†	Rated speed rpm		300
hPa :	1000	Į	Del. quantity	•	500
Del. quantity cm3/1000 strokes :		1	cm3/1000 strokes Tolerance	:	80.0
Tolerance cm3/1000 str. +-:	1.5	1	cm3/1000 str. +-	:	20.0
Spread		+			
cm3/1000 strokes : Check tolerance		‡	ASSEMBLY AND ADJUS	STMEN"	T DIMENSIONS
cm3/1000s. + :	1.5	+	1.00 /		
Spread cm3/1000 strokes :	5.0	‡	LDA/ HBA stroke mm	:	7,5
		‡	Dimension KF mm Tolerance mm +-		
ELECTR. SHUTOFF		+	Dimension MS mm	: 1,	3
CONTROL LEVER, IDLE	STOP	+	Tolerance mm +-	: +-(	0,2
		+	SVS dimension mm	: 7,	ס

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 53,0..61,0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.95 Test oil : ISO 4113

Part no. : 0 460 485 031 Pump designation : VE5/8F2100L525-6

Customer—spec. information
Customer : VW
Motor : 2,4L SD
Power KW : 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Supply pomp

pressure bar : 7.4
Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 35.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540

Del. quantity

cm3/1000 strokes : 7.0

Tolerance

cm3/1000 str. + : 0.5

Shutoff solenoid

Volt : 12

IDLE DELIVERY

Rated speed rpm : 415

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. + : 1.0

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

HIGH IDLE SETTING

Rated speed rpm : 465

Del. quantity

cm3/1000 strokes : 8.0

Cms/1000 str. + : 1.0         1.0           Shutoff solenoid Volt : 12         INJECTION-PUMP TEST SPECIFICATIONS           FULL-LOAD SPEED REGULATION         Rated speed rpm : 1790           Rated speed rpm : 2400 bel. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 12.0 Tolerance mm +: 0.4 Check Che	Tolerance	+
### Rated speed rpm : 2400    Patted speed rpm : 2400   Patted speed rpm : 3400   Patted speed r		+ INJECTION-PUMP TEST SPECIFICATIONS
### Rated speed rpm: 2400    Pated speed rpm: 2400   Pated speed rpm: 2400   Pated speed rpm: 2400   Pated speed rpm: 2400   Pated speed rpm: 2400   Pated speed rpm: 20.4   Pated speed rpm: 20.6   Pated speed rpm: 10.7   Pated speed rpm: 100   Pated speed rpm: 2100   Pated speed rpm: 55.5   Pated speed rpm: 55.5   Pated speed rpm: 55.5   Pated speed rpm: 600	Volt : 12	TIMING DEVICE CHARACTERISTIC
### Rated speed rpm : 2400    Particle   Par	FULL-LOAD SPEED REGULATION	+
cm3/1000 strokes       12.0       Tolerance mm       +: 0.4         Tolerance       cm3/1000 str.       +: 2.0       Tolerance mm       +: 0.7         Shutoff soleroid Volt       : 12       **Tolerance mm       +: 0.7         Volt       : 12       **Shutoff soleroid Volt       **Volt       : 12         STARTING FUEL DELIVERY       Rated speed rpm       : 1100       **SV travel mm       : 1.6       **Deliance mm       +: 0.4       **Check       **Check <td< td=""><td></td><td>+</td></td<>		+
cm3/1000 str. +: 2.0         tolerance mm +: 0.7           Shuroff solenoid Volt : 12         volt : 12           STARTING FUEL DELIVERY         Rated speed rpm : 1100           Rated speed rpm : 100         SV travel mm : 1.6           Del. quantity         Del. quantity           tolerance mm +: 0.4         Check           cm3/1000 strokes : 55.0         Shutoff solenoid           Volt : 12         SUPPLY PUMP PRESSURE CHARACTERISTIC           LOAD-DEPENDENT START OF DELIVERY SETTING         Supply pomp pressure bar : 8.1           LOAD-DEPENDENT START OF DELIVERY SETTING         Supply pomp pressure bar : 8.1           DELIVERY DIFFERENCE         Shutoff solenoid Volt : 12           Rated speed rpm : 1500         Rated speed rpm : 1100           Del. quantity         Supply pomp pressure bar : 6.2           cm3/1000 strokes : -7.0         Supply pomp pressure bar : 6.2           Tolerance bar +: 1.0         Shutoff solenoid Volt : 12           PRESSURE DIFFERENCE         OVERFLOW QUANTITY           Rated speed rpm : 1500         Rated speed rpm : 2100           Del. quantity         Rated speed rpm : 2100           cm3/1000 str. +: 0.1         Check tolerance           cm3/1000 str. +: 0.1         Check tolerance           cm3/1000 str. +: 0.1         Check tolerance		l ·
Shutoff solenoid         Shutoff solenoid           Volt         : 12           STARTING FUEL DELIVERY         Rated speed rpm : 1100           Rated speed rpm : 100         SV travel mm : 1.6           Del. quantity         Tolerance mm +: 0.4           cm3/1000 strokes : 55.0         Check           Tolerance mm +: 0.7         0.4           Check tolerance mm +: 0.7         0.4           Shutoff solenoid         Volt : 12           LOAD-DEPENDENT START OF DELIVERY         SUPPLY PUMP PRESSURE CHARACTERISTIC           Rated speed rpm : 1790         Supply pomp           SETTING         Rated speed rpm : 1790           DELIVERY DIFFERENCE         Shutoff solenoid           Rated speed rpm : 1500         Rated speed rpm : 1100           SUPPLY PUMP PRESSURE CHARACTERISTIC         Rated speed rpm : 1100           Rated speed rpm : 1500         Rated speed rpm : 1100           Pressure bar : 8.1         Tolerance bar +: 0.3           Shutoff solenoid         Volt : 12           PRESSURE DIFFERENCE         OVERFLOW QUANTITY           Rated speed rpm : 1500         Rated speed rpm : 2100           DeL quantity         Com/10s +: 41.6           Shutoff solenoid         Volt : 12           TIMING-DEVICE TRAVEL DIFFERENCE         Sh		+ Check
Rated speed rpm : 100	Shutoff solenoid	+ Shutoff solenoid
Rated speed rpm : 100		+
Del. quantity   Cm3/1000 strokes : 55.0   Check   Ch	STARTING FUEL DELIVERY	+ Rated speed rpm : 1100
Check   Tolerance   Toleranc		SV travel mm : 1.6
Tolerance cm3/1000 str. + : 20.0   Shutoff solenoid Volt : 12   SUPPLY PUMP PRESSURE CHARACTERISTIC		
Shutoff solenoid	Tolerance	tolerance mm +-: 0.7
SUPPLY PUMP PRESSURE CHARACTERISTIC   Rated speed rpm : 1790   Supply pomp   pressure bar : 8.1   Tolerance bar +: 0.3   Shutoff solenoid   Volt : 12   Supply pomp   pressure bar : 1100   Supply pomp   pressure bar : 6.2   Cm3/1000 strokes : -7.0   Supply pomp   pressure bar : 6.2   Cm3/1000 strokes : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 12   Volt : 14   Volt : 15   Volt : 1	Shutoff solenoid	
Supply pomp   Pressure bar   10.3	volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
Supply pomp   Pressure bar   10.3		Poted enough man 1700
DELIVERY DIFFERENCE  DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -7.0  Tolerance  max / 1000 str. + : 1.0  PRESSURE DIFFERENCE  Rated speed rpm : 1500  PRESSURE DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -0.2  PRESSURE DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 strokes : -1.2  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -1.2  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -1.2  Rated speed rpm : 600  Check tolerance  ccm/10s + : 55.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 600  Del. quantity  cm3/1000 strokes : -1.2  Tolerance  ccm/10s : 63.8  Tolerance  ccm/10s + : 22.2	LOAD-DEPENDENT START OF DELIVERY	
Tolerance bar + : 0.3		
Rated speed rpm : 1500  bel. quantity cm3/1000 strokes : -7.0  Tolerance cm3/1000 str. +-: 1.0  PRESSURE DIFFERENCE  Rated speed rpm : 1500  bel. quantity cm3/1000 str. +-: 1500  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid  Volt  Rated speed rpm : 2100  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +-: 0.1  Check tolerance cm3/1000 strokes : -1.2  Rated speed rpm : 1500  Del. quantity  Rated speed rpm : 1500  Rated speed rpm : 2100  Check tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 55.5  Shutoff solenoid  Volt  Rated speed rpm : 600  Del. quantity cm3/1000 strokes : -1.2  Rated speed rpm : 600  Del. quantity cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 str. +-: 0.1  Tolerance ccm/10s +-: 22.2		
Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -7.0  Tolerance cm3/1000 str. +: 1.0  PRESSURE DIFFERENCE  Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -0.2  Rated speed rpm : 2100  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +: 0.1  Shutoff solenoid  Volt  Rated speed rpm : 2100  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +: 0.1  Shutoff solenoid  Volt  Rated speed rpm : 2100  Coverflow quantity ccm/10s : 97.2  Tolerance ccm/10s +: 41.6  Check tolerance ccm/10s +: 55.5  Shutoff solenoid  Volt  Rated speed rpm : 600  Del. quantity cm3/1000 strokes : -1.2  Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -1.2  Rated speed rpm : 600  Del. quantity cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Tolerance cm3/1000 strokes : -1.2  Shutoff solenoid  Tolerance cm3/1000 strokes : -1.2  Shutoff solenoid  Tolerance cm3/1000 strokes : -1.2  Shutoff solenoid  Tolerance ccm/10s : 63.8  Tolerance ccm/10s +: 22.2	DELIVERY DIFFERENCE	
cm3/1000 strokes : -7.0       Supply pomp         Tolerance       6.2         cm3/1000 str. +- : 1.0       Tolerance bar +- : 0.3         Shutoff solenoid       Shutoff solenoid         Volt : 12       Volt : 12         PRESSURE DIFFERENCE       OVERFLOW QUANTITY         Rated speed rpm : 1500       Rated speed rpm : 2100         Del. quantity       Overflow quantity         cm3/1000 strokes : -0.2       Tolerance         cm3/1000 str. +- : 0.1       ccm/10s +- : 41.6         Shutoff solenoid       Check tolerance         ccm/10s +- : 55.5       Shutoff solenoid         Volt : 12       Check tolerance         ccm/10s +- : 55.5       Shutoff solenoid         Volt : 12       Rated speed rpm : 600         Del. quantity       Rated speed rpm : 600         cm3/1000 strokes : -1.2       Overflow quantity         Tolerance       ccm/10s : 63.8         cm3/1000 strokes : -1.2       Tolerance         Shutoff solenoid       50.1	The state of the s	+
cm3/1000 str. +-:       1.0       Tolerance bar +-:       0.3         Shutoff solenoid       Volt : 12         PRESSURE DIFFERENCE       OVERFLOW QUANTITY         Rated speed rpm : 1500       Rated speed rpm : 2100         Del. quantity       Overflow quantity         cm3/1000 strokes : -0.2       ccm/10s : 97.2         Tolerance       Tolerance         cm3/1000 str. +-:       0.1         Shutoff solenoid       Check tolerance         volt : 12       Check tolerance         TIMING-DEVICE TRAVEL DIFFERENCE       Shutoff solenoid         Volt : 12       Rated speed rpm : 55.5         Shutoff solenoid       Volt : 12         Rated speed rpm : 1500       Rated speed rpm : 600         Del. quantity       Rated speed rpm : 600         cm3/1000 strokes : -1.2       Overflow quantity         Tolerance       ccm/10s : 63.8         cm3/1000 str. +-: 0.1       Tolerance         Shutoff solenoid	cm3/1000 strokes : -7.0	+ Supply pomp
Shutoff solenoid Volt : 12  PRESSURE DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 12  Check tolerance ccm/10s +-: 55.5  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2  Rated speed rpm : 600 Overflow quantity Tolerance cm3/1000 strokes : -1.2 Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid  Tolerance Cm/10s +-: 63.8 Tolerance Cm/10s +-: 22.2		
Volt       : 12         PRESSURE DIFFERENCE       OVERFLOW QUANTITY         Rated speed rpm       : 1500         Del. quantity       Overflow quantity         cm3/1000 strokes       : -0.2         Tolerance       Tolerance         cm3/1000 str.       + : 0.1         Shutoff solenoid       Check tolerance         volt       : 12         Check tolerance       ccm/10s       + : 55.5         TIMING-DEVICE TRAVEL DIFFERENCE       Shutoff solenoid         Volt       : 12         Rated speed rpm       : 600         Del. quantity       Rated speed rpm       : 600         cm3/1000 strokes       : -1.2       Overflow quantity         Tolerance       ccm/10s       : 63.8         cm3/1000 str.       + : 0.1       Tolerance         Shutoff solenoid       + : 22.2		
Rated speed rpm : 1500  Del. quantity cm3/1000 strckes : -0.2  Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid  Volt : 12  Rated speed rpm : 2100  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 55.5  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -1.2  Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid  Volt : 12  Rated speed rpm : 600  Overflow quantity Tolerance ccm/10s : 63.8  Tolerance Shutoff solenoid  Tolerance ccm/10s +-: 22.2		
Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 str. +-: 0.1  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 str. +-: 0.1  Shutoff solenoid  Volt : 12  Rated speed rpm : 600  Check tolerance ccm/10s +-: 55.5  Shutoff solenoid Volt : 12  Rated speed rpm : 600  Overflow quantity ccm/10s : 63.8  Tolerance cm/10s +-: 22.2	PRESSURE DIFFERENCE	OVERFLOW QUANTITY
cm3/1000 strokes : -0.2       ccm/10s : 97.2         Tolerance cm3/1000 str. + : 0.1       ccm/10s + : 41.6         Shutoff solenoid Volt : 12       Check tolerance ccm/10s + : 55.5         TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500       Shutoff solenoid Volt : 12         Rated speed rpm : 1500 cm3/1000 strokes : -1.2       Rated speed rpm : 600 ccm/10s : 63.8         Tolerance cm3/1000 str. + : 0.1 shutoff solenoid       ccm/10s : 63.8         Tolerance ccm/10s shutoff solenoid       ccm/10s + : 22.2		• • • • • • • • • • • • • • • • • • •
cm3/1000 str. + : 0.1       ccm/10s + : 41.6         Shutoff solenoid       Check tolerance         volt : 12       ccm/10s + : 55.5         TIMING-DEVICE TRAVEL DIFFERENCE       Shutoff solenoid         Volt : 12         Rated speed rpm : 1500       Rated speed rpm : 600         Del. quantity       ccm/10s : 63.8         cm3/1000 strokes : -1.2       ccm/10s : 63.8         Tolerance       ccm/10s + : 22.2	cm3/1000 strokes : -0.2	+ ccm/10s : 97.2
Shutoff solenoid  Volt : 12  Check tolerance  ccm/10s +: 55.5  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -1.2  Tolerance  cm/10s : 63.8  Tolerance  Shutoff solenoid  Check tolerance  ccm/10s +: 55.5  Shutoff solenoid  Volt : 12  Rated speed rpm : 600  Overflow quantity  ccm/10s : 63.8  Tolerance  Shutoff solenoid  Check tolerance  ccm/10s +: 22.2		
TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -1.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Rated speed rpm : 600  Overflow quantity  ccm/10s : 63.8  Tolerance  Shutoff solenoid  - ccm/10s + : 22.2	Shutoff solenoid	+
Rated speed rpm : 1500  Del. quantity		+ ccm/10s +-: 55.5
Del. quantity		
cm3/1000 strokes : -1.2       + Overflow quantity         Tolerance cm3/1000 str. +- : 0.1       + ccm/10s : 63.8         Shutoff solenoid       + ccm/10s +- : 22.2		+ Rated speed rpm : 600
cm3/1000 str. + : 0.1 + Tolerance Shutoff solenoid + ccm/10s + : 22.2	cm3/1000 strokes : -1.2	+ Overflow quantity
	cm3/1000 str. + : 0.1	+ Tolerance
		+ ccm/1Us +-: 22.2

		1		
Charle to Language		†	Tolerance	4 5
Check tolerance ccm/10s +-	: 34	7	cm3/1000 str. +-:	1.5
	: 54	•′ †	Check tolerance	3.8
Shutoff salenoid		12 🚶	cm3/1000s. +-:	3.0
Volt	•	12 +	Shutoff solenoid	45
DEL THEON AND DOCAL	ALTAY CUA	-	Volt :	12
DELIVERY AND BREAK	AWAT CHA	KACIERISIIC +	Bakad and I am	4250
Dated aread are	. 2/00	7	Rated speed rpm :	1250
Rated speed rpm Del. quantity	. 2400	<b>T</b>	Del. quantity cm3/1000 strokes :	35.5
cm3/1000 strokes	. 12	T	Tolerance	33.3
Tolerance	. ,,	.s	cm3/1000 str. +-:	0.5
cm3/1000 str. +-	. 2	.o I	Check tolerance	0.5
Check tolerance		1	cm3/1000s. +-:	2.2
cm3/1000s. +-	: 4	.0 1	Shutoff solenoid	
Shutoff solenoid		1	Volt :	12
Volt	:	12 🗼		
		+		
Rated speed rpm	: 2300	+	MECHANICAL SHUTOFF	
Del. quantity	_	_ +		
cm3/1000 strokes	: 22	.0 +	Rated speed rpm :	2100
Tolerance	_	<u> </u>	Del. quantity	
cm3/1000 str. +-	: 5	.0 +	cm3/1000 strokes :	1.5
Check tolerance		.0 ‡	Tolerance	4.5
cm3/1000s. +- Shutoff solenoid	; 0	••	cm3/1000 str. +-:	1.5
Volt	:	12	Check tolerance cm3/1000s. +-:	1.5
VOCC	•	'E I	Shutoff solenoid	1.0
		Ţ		
Rated speed rpm	: 2600	+	Volt :	12
Rated speed rpm Del. quantity	: 2600	‡	Volt :	12
Rated speed rpm Del. quantity cm3/1000 strokes		.0 +	Volt :	12
Del. quantity cm3/1000 strokes Tolerance	: 3	.0	Volt : ELECTR. SHUTOFF	12
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: 3	+		
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 3 : 3	.0 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 3 : 3	.0	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm :	STOP
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	: 3 : 3	.0 .0 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity	STOP 415
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: 3 : 3	.0 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes :	STOP 415
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 3 : 3 : 3	.0 +	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	STOP 415 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt Rated speed rpm	: 3 : 3 : 3	.0 +	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +:	STOP 415 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 3 : 3 : 3 : 2100	.0 + .0 .0 + .12	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance	STOP 415 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: 3 : 3 : 3 : 2100	.0 + .0 .0 + .12	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	STOP 415 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 3 : 3 : 3 : 2100 : 29	.0 + .0 .0 + .12	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +: Check tolerance	415 1.5 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 3 : 3 : 3 : 2100 : 29 : 1	.0 .0 .0 .0 .12 .50	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread	415 1.5 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: 3 : 3 : 3 : 2100 : 29 : 1	.0 + .0 + .12 + .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread	1.5 1.5 1.5 1.5 5.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid	: 3 : 3 : 2100 : 29 : 1 : 2	.0 .0 .0 .2	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes :  FULL-LOAD STOP CONT	1.5 1.5 1.5 1.5 5.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	: 3 : 3 : 2100 : 29 : 1 : 2	.0 .0 .0 .0 .12 .50	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes : FULL-LOAD STOP CONT	1.5 1.5 1.5 1.5 5.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: 3 : 3 : 3 : 2100 : 29 : 1 : 2	.0 .0 .0 .12 .5 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes : FULL-LOAD STOP CONT  Rated speed rpm : Del. quantity	1.5 1.5 1.5 1.5 5.0 ROL LEVER
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm	: 3 : 3 : 2100 : 29 : 1 : 2	.0 .0 .0 .12 .5 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes :  FULL-LOAD STOP CONT  Rated speed rpm : Del. quantity cm3/1000 strokes :	1.5 1.5 1.5 1.5 5.0 ROL LEVER
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity	: 3 : 3 : 3 : 2100 : 29 : 1 : 2 : 1850	.0 .0 .0 .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes: FULL-LOAD STOP CONT Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes	: 3 : 3 : 3 : 2100 : 29 : 1 : 2 : 1850	.0 .0 .0 .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 3 : 3 : 3 : 2100 : 29 : 1 : 2 : 32	.0 .0 .0 .0 .0 .2 .2 .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes:	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: 3 : 3 : 3 : 2100 : 29 : 1 : 2 : 32	.0 .0 .0 .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Spread cm3/1000 strokes:	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	: 3 : 3 : 2100 : 29 : 1 : 2 : 32 : 33	.0 .0 .0 .12 .5 .0 .2 .5 .0 .0	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Check tolerance	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: 3 : 3 : 2100 : 29 : 1 : 2 : 32 : 33	.0 .0 .0 .0 .0 .2 .2 .5	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Spread cm3/1000 strokes: Check tolerance cm3/1000 strokes: Check tolerance cm3/1000s. +:	1.5 1.5 1.5 1.5 5.0 ROL LEVER 415 1.5 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	: 3 : 3 : 2100 : 29 : 1 : 2 : 1850 : 32 : 3	.0 .0 .0 .12 .5 .0 .2 12	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Check tolerance cm3/1000s. +: Spread cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Check tolerance	STOP  415  1.5  1.5  1.5  5.0  ROL LEVER  415  1.5  5.0  1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 str. + Shutoff solenoid Volt  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid	: 3 : 3 : 2100 : 29 : 1 : 2 : 1850 : 32 : 3	.0 .0 .0 .12 .5 .0 .2 12	ELECTR. SHUTOFF CONTROL LEVER, IDLE  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000s. +: Check tolerance cm3/1000 strokes:  FULL-LOAD STOP CONT  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000 strokes: Check tolerance cm3/1000 strokes: Check tolerance cm3/1000s. +: Spread Cm3/1000s. +: Spread	STOP  415  1.5  1.5  1.5  5.0  ROL LEVER  415  1.5  5.0  1.5

CHECKING LOAD-DEP START OF DELIVERY		ENT	
DELIVERY DIFFEREN	ÇE		
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	:	1500	
	:	-10.5	
	:	3.0	
	:	4.0	
	:	12	
TIMING-DEVICE TRA	۷EL	DIFFERENCE	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	1500	
	:	-1.2	
cm3/1000 str. +- Check tolerance	:	0.1	
cm3/1000S. +- Shutoff solenoid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance		1.5	
cm3/1000 str. +- Check tolerance	•	1.5	
cm3/1000S. +- Shutoff solenoid	:	1.5	
Volt	:	12	
PRESSURE DIFFEREN	CE		
Rated speed rpm Supply pomp	:	1500	
pressure bar Tolerance bar +-	:	-1.0 0.2	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm Tolerance mm +-	:	1500 0.2	
Check tolerance mm +	:	0.6	
Shutoff solenoid Volt	:	12	

## START TRANSITION

Rated speed rpm Del. quantity	:	380
cm3/1000 strokes	:	27.0
cm3/1000 str. +- Shutoff solenoid Volt	:	10.0
	:	12
		400
Rated speed rpm	:	180
Del. quantity		
Del. quantity cm3/1000 strokes	:	60.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	60.0 25.0
Del. quantity cm3/1000 strokes Tolerance	:	

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension k	< mm	:	3,3
Tolerance n	nm +-	:	+-0,1
Dimension k	<f mm<="" td=""><td>:</td><td>5,8</td></f>	:	5,8
Tolerance m	nm +-	:	+-0,2
Dimension M	1S mm	:	1,4
Tolerance n	nm +-	:	+-0,2

## POTENTIOMETER

SET

1. measurement voltage Volt : 5,0
1. measurement voltage Volt : 0,7

# CONTROL LEVER POSITION SET

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Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 61,5..68,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.95 Test oil : ISO 4113

: 0 460 485 034 Part no. Pump designation: VE5/8F2100L545-7

Customer-spec. information Customer : VW

Motor : 2,41 SD Power KW 57.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

ber Tolerance bar + : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

## **REMARKS**

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 2.4 : Tolerance mm +-: 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm :

Supply pomp

pressure bar 6.0 Tolerance bar +-: 0.3

Shutoff solenoid

12 Volt

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : 0.5 Spread cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540 Del. quantity

cm3/1000 strokes : 7.0

Tolerance:

cm3/1000 str. +-:

Shutoff solenoid

Volt 12

#### IDLE DELIVERY

Rated speed rpm : 415 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. +-: 1.0

Spread

cm3/1000 strokes : 2.0 Shutoff solemoid

12 Volt

#### HIGH IDLE SETTING

Rated speed rpm 5 450 Del. quantity

cm3/1000 strokes # 8.0

Tolerance cm3/1000 str. +-: 1.0	<u> </u>		
Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS		
	TIMING DEVICE CHARACTERISTIC		
FULL-LOAD SPEED REGULATION	Rated speed rpm : 1790		
Rated speed rpm : 2400 Del. quantity	+ SV travel mm : 5.7		
cm3/1090 strokes : 12.0 Tolerance	Tolerance mm: +-: 0.4  Check		
cm3/1000 str. + : 2.0 Shutoff solenoid	tolerance mm + : 0.7 Shutoff solenoid		
Volt : 12	Volt : 12		
STARTING FUEL DELIVERY	Rated speed rpm : 1000		
Rated speed rpm : 100	SV travel mm : 0.7		
Del. quantity cm3/1000 strokes : 60.0	+ Tolerance mm +-: 0.4 + Check		
Tolerance cm3/1000 str. +-: 25.0	+ tolerance mm; +-: 0.7 + Shutoff solenoid		
Shutoff solenoid Volt : 12	† Volt : 12		
. 12	SUPPLY PUMP PRESSURE CHARACTERISTIC		
LOAD DEDENDENT STADT OF DELIVERY	Rated speed rpm : 1790		
LOAD-DEPENDENT START OF DELIVERY SETTING	+ Supply pomp + pressure bar : 7.5		
DELIVERY DIFFERENCE	+ Tolerance bar + : 0.3 + Shutoff solenoid		
Rated speed rpm : 1500	+ Volt : 12		
Del. quantity  cm3/1000 strokes : -7.0	Rated speed rpm : 1000 Supply pomp		
Tolerance	+ pressure bar : 5.3		
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Tolerance bar → : 0.3 + Shutoff solenoid		
Volt : 12	+ Volt : 12		
PRESSURE DIFFERENCE	OVERFLOW QUANTITY		
Rated speed rpm : 1500 Del. quantity	Rated speed rpm : 2100 Overflow quantity		
cm3/1000 strokes : -0.2 Tolerance	ccm/10s : 97.2 Tolerance		
cm3/1000 str. + : 0.1 Shutoff solenoid	ccm/10s +-: 41.6		
Volt : 12	Check tolerance + ccm/10s + : 55.5		
TIMING-DEVICE TRAVEL DIFFERENCE	Shutoff solenoid Volt : 12		
Rated speed rpm : 1500 Del. quantity	Rated speed rpm : 600		
cm3/1000 strokes : -0.4 Tolerance	Overflow quantity  - ccm/10s : 63.8		
cm3/1000 str. + : 0.1	+ Tolerance		
Shutoff solenoid Volt : 12	+ ccm/10s +-: 22.2		

	l Dal mantitu
Check tolerance	<pre>Del. quantity      cm3/1000 strokes : 36.5</pre>
ccm/10s +-: 34.7	Tolerance
Shutoff solenoid	+  cm3/1000  str. + : 0.5
Volt : 12	→ Check tolerance
	+  cm3/1000s. +-: 2.2
DELIVERY AND BREAKAWAY CHARACTERISTI	<b>₹</b>
Rated speed rpm : 2400	+ Volt : 12
Rated speed rpm : 2400 Del. quantity	Ī
cm3/1000 strokes : 12.0	
Tolerance	+ ELECTR. SHUTOFF
cm3/1000 str. +-: 2.0	CONTROL LEVER, IDLE STOP
Check tolerance	+
cm3/1000s. +-: 4.0	Rated speed rpm : 415
Shutoff solenoid	Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 2300	- cm3/1000 str. + : 1.5
Del. quantity	+ Check tolerance
cm3/1000 strokes : 22.0	+ cm3/1000s. +-: 1.5
Tolerance	Spread
cm3/1000 str. +-: 5.0	+ cm3/1000 strokes : 5.0
Check tolerance	+
cm3/1000s. + : 6.0	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	†
Volt : 12	+ Rated speed rpm : 415
0-4-44 3400	Del. quantity
Rated speed rpm : 2600 Del. quantity	+ cm3/1000 strokes : 1.5 + Tolerance
cm3/1000 strokes : 3.0	cm3/1000 str. +-: 1.5
Tolerance	Spread
cm3/1000 str. +-: 3.0	+ cm3/1000 strokes : 5.0
Check tolerance	+ Check tolerance
cm3/1000s. +-: 3.0	+ cm3/1000s. $+$ : 1.5
Shutoff sclenoid	+ Spread
Volt : 12	cm3/1000 strokes : 5.0
Rated speed rpm : 2100	†
Rated speed rpm : 2100 Del. quantity	Ī
cm3/1000 strokes : 31.0	
Tolerance	RESIDUAL QUANTITY
cm3/1000 str. +-: 1.0	+
Check tolerance	+ Rated speed rpm : 490
cm3/1000s. +-: 2.2	+ Del. quantity
Shutoff solenoid	- cm3/1000 strokes : 7.8
Volt : 12	+ Tolerance
Rated speed rpm : 600	+ cm3/1000 str. +-: 1.0 + Check tolerance
Rated speed rpm : 600 Del. quantity	- cm3/1000s. +-: 2.5
cm3/1000 strokes : 33.8	Shutoff solenoid
Tolerance	Volt : 12
cm3/1000 str. +-: 1.5	+
Check tolerance	+
cm3/1000s. + : 3.0	
Shutoff solenoid	+ CHECKING LOAD-DEPENDENT
Volt : 12	START OF DELIVERY
Rated speed rpm : 1250	T NEI THERE ATEREDENICE
Rated speed rpm : 1250	+ DELIVERY DIFFERENCE
	į.

Rated speed rpm :	1500	+ Shutoff solenoid
Del. quantity	<i>,</i>	+ Volt : 12
cm3/1000 strokes :	-6.5	†
Tolerance cm3/1000 str. +-:	3.0	Rated speed rpm : 180
Check tolerance	3.0	+ Rated speed rpm : 180 + Del. quantity
cm3/1000s. +-:	4.0	- cm3/1000 strokes : 60.0
Shutoff solenoid		+ Tolerance
Volt :	12	+ cm3/1000 str. +-: 25.0
		- Shutoff solenoid
TIMING-DEVICE TRAVEL	DIFFERENCE	+ Volt # : 12
	4500	+
Rated speed rpm :	1500	ACCEPTANT AND ADDITIONAL PROPERTY OF THE PROPE
Del. quantity cm3/1000 strokes :	-0.4	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance	-0.4	Dimension K mm : 3,3
cm3/1000 str. +-:	0.1	+ Tolerance mm +-: +-0,1
Check tolerance	<b>.</b>	+ Dimension KF mm : 5,8
cm3/1000s. +-:	0.1	+ Tolerance mm + : +-0,2
Shutoff solenoid		+ Dimension MS mm : 1,4
Volt :	12	+ Tolerance mm $+$ : $+-0.2$
		+
DELIVERY DIFFERENCE		†
Rated speed rpm :	1500	CONTROL LEVER POSITION
Del. quantity	1300	SET
cm3/1000 strokes :	1.5	
Tolerance	,	1
cm3/1000 str. +-:	1.5	+ Control lever
Check tolerance		position YA mm : 32,834,8
cm3/1000s. +-:	1.5	+
Shutoff solenoid	42	+ Control lever
Volt :	12	position YB mm : 60,571,5
PRESSURE DIFFERENCE		I
THE BOOKE DITTERCINCE		
Rated speed rpm :	1500	+
Supply pomp		+ End of test-specification sheet
pressure bar :	-1.0	+
Tolerance bar + :	0.2	†
Shutoff solenoid Volt :	12	†
vo(t :	1 4	I
TIMING-DEVICE TRAVEL	DIFFERENCE	1
		+
Rated speed rpm :	1500	+
Tolerance mm +:	0.2	+
Check	0. (	†
tolerance mm +-:	0.6	†
Shutoff solenoid Volt :	12	Ī
voct .	16	I
		1
START TRANSITION		+
		+
Rated speed rpm :	380	+
Del. quantity	07.0	+
cm3/1000 strokes :	27.0	†
Tolerance	10.0	†
cm3/1000 str. + :	10.0	Τ

Note remarks	
Refer to Service : adjustment instru See microcard(s)	ctions.
Edition Test oil	: 15.02.96 : ISO 4113
Part no. Pump designation	: 0 460 404 078 : VE4/10F2100L553
Customer-spec. in	
Customer Motor	: VM : 425 CLIRZ/CLIRX
TEST BENCH REQUIRE	EMENTS
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 022
Opening pressure bar Tolerance bar +-	: 130 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450
REMARKS	
INJECTION PUMP SET	TTING VALUES
TIMING DEVICE TRAN	/EL
Rated speed rpm Aneroid pressure	: 500
Aneroju pressure	• 1000

: 1000

Setting mm Tolerance mm +- Shutoff solenoid Volt	:	7.7 0.2 12
SUPPLY PUMP PRESS	URE	
Rated speed rpm Android pressure hPa Supply pomp pressure bar Tolerance bar +- Shutoff solenoid Volt	•	500 1000 5.9 0.3
FULL-LOAD DELIVER	Y WI	TH BOOST PRESSURE
Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes	:	68.0
Tolerance cm3/1000 str. +-	:	0.5
Spread cm3/1000 strokes Check tolerance	:	3.0
cm3/1000s. Shutoff solenoid	:	3.0
Volt	:	12
FULL-LOAD DELIV.	WITH	HOUT BOOST PRESSURE
Rated speed rpm Del. quantity	:	700
cm3/1000 strokes	:	44.5
cm3/1000 str. +- Shutoff solenoid	:	0.5
Volt Check tolerance	:	12
cm3/1000s.	:	3.0
IDLE SETTING		
Rated speed rpm Del. quantity	:	450
cm3/1000 strokes Tolerance	:	12.0
cm3/1000 str. +- Shutoff solenoid	:	2.0
Volt Spread	:	12

Spread cm3/1000 strokes : Check tolerance cm3/1000s. :

3.0

3.0

hPa

		+ Check
		+ tolerance mm +-: 0.5
FULL-LOAD SPEED REGU	LATION	Shutoff solenoid
~		+ Volt : 12
	2300	Tiping days
Pressure hPa : Del. quantity	1000	+ Timing device + solenoid Volt : 100
cm3/1000 strokes :	49.0	T social vocc : 100
Tolerance	,,,,,	+ Rated speed rpm : 1000
cm3/1000 str. +-:	3.0	+ Aneroid pressure
Shutoff solenoid		+ hPa : 1000
Volt :	12	+ 24
STARTING FUEL DELIVE	:DV	+ SV travel mm : 9.0 + Tolerance mm +-: 0.5
SINKITING LOSE DESTA	rc i	+ Check
Rated speed rpm :	100	+ tolerance mm +: 0.7
Del. quantity		+ Shutoff solenoid
cm3/1000 strokes :	65.0	+ Volt : 12
Tolerance	47.0	+
cm3/1000 str. +-: Shutoff solenoid	17.0	+ Rated speed rpm : 1000
Volt :	12	+ Aneroid pressure + hPa : 1000
	,,	. 1000
		+ SV travel mm : 0.3
		+ Tolerance mm + : 0.3
		Check
INJECTION-PUMP TEST	SPECIFICATIONS	+ tolerance mm +-: 0.3 + Shutoff solenoid
TIMECTION FOMP TEST	SPECIFICATIONS	+ Volt : 12
TIMING DEVICE CHARAC	TERISTIC	+
		+ Timing device
Rated speed rpm :	2100	+ solenoid Volt : 100
Aneroid pressure hPa :	1000	SUDDLY DIMD DESCRIPT CHARACTERYSTYS
nra .	1000	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
SV travel mm :	9.8	Rated speed rpm : 2100
Tolerance mm +:	0.5	+ Aneroid pressure
Check		+ hPa : 1000
tolerance mm +-:	0.7	+ Supply pomp
Shutoff solenoid Volt :	12	+ pressure bar : 8.0 + Tolerance bar + : 0.3
vott .	12	+ Shutcff solenoid
Rated speed rpm :	150	+ Volt : 12
Aneroid pressure		+
hPa :	1000	+ Rated speed rpm : 150
Cit Amount on	5.5	+ Aneroid pressure + hPs : 1000
SV travel min : Tolerance mm +-:		+ hPe : 1000 + Supply pomp
Check	1.0	pressure bar : 4.8
tolerance mm +-:	1.8	+ Tolerance bar +-: 0.8
Shutoff solenoid		+ Shutoff solenoid
Volt :	12	+ Volt : 12
Rated speed rpm :	2100	+ Rated speed rpm : 1000
Aneroid pressure	2100	+ Aneroid pressure
hPa :	1000	+ hPa : 1000
		+ Supply pomp
SV travel mm :		+ pressure bar : 6.5
Tolerance mm +-:	U.5	† Tolerance bar +-: 0.3

Shutoff solenoid Volt : 12	+ Tolerance
	+ cm3/1000 str. +-: 0.5 + Check tolerance
OVERFLOW QUANTITY	+ cm3/1000s. +-: 2.5 + Shutoff solenoid
Rated speed rpm : 2100 Aneroid pressure	+ Volt : 12
hPa : 1000 Overflow quantity	+ Rated speed rpm : 2100 + Aneroid pressure
ccm/10s : 111.1 Tolerance	+ hPa : 1000 + Del. quantity
ccm/10s +-: 55.5	- cm3/1000 strokes : 63.5 - Tolerance
Check tolerance ccm/10s +-: 55.5	- cm3/1000 str. +-: 1.5 - Check tolerance
Shutoff solenoid Volt : 12	+ cm3/1000s. +-: 3.0 + Shutoff solenoid
DELIVERY AND BREAKAWAY CHARACTERISTIC	Volt : 12
Rated speed rpm : 2300	Rated speed rpm : 700 Aneroid pressure
Aneroid pressure hPa : 1000	hPa : 1000 Del. quantity
Del. quantity cm3/1000 strokes : 49.0	- cm3/1000 strokes : 71.0 - Tolerance
Tolerance cm3/1000 str. + : 3.0	- cm3/1000 str. +-: 1.5 Check tolerance
Check tolerance cm3/1000s. + : 4.0	+ cm3/1000s. +-: 3.0 + Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
Rated speed rpm : 2450	Rated speed rpm : 1500 Aneroid pressure
Aneroid pressure hPa : 1000	+ hPa : 1000 + Del. quantity
Del. quantity cm3/1000 strokes : 7.0	- cm3/1000 strokes : 68.0 - Tolerance
Check tolerance cm3/1000s. +-: 5.0	+ cm3/1000 str. +-: 0.5 + Check tolerance
Shutoff solenoid Volt : 12	- cm3/1000s. +-: 2.0 - Shutoff solenoid
Rated speed rpm : 2650	+ Volt : 12
Aneroid pressure hPa : 1000	
Del. quantity cm3/1000 strokes : 1.5	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
Tolerance cm3/1000 str. +-: 1.5	Rated speed rpm : 450
Check tolerance cm3/1000s. +-: 1.5	Del. quantity - cm3/1000 strokes : 1.5
Shutoff solenoid Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : 700	Check tolerance cm3/1000s. +-: 1.5
Aneroid pressure hPa : 500	<u> </u>
Del. quantity cm3/1000 strokes : 58/5	IDLE DELIVERY
	Rated speed rpm : 800

Del. quantity		
cm3/1000 strokes	:	4.0
Tolerance		
cm3/1000 str. +	:	2.5
Check tolerance		
cm3/1000s. +	:	4.0
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	500
Rated speed rpm Del. quantity	:	500
	:	500 5.0
Del. quantity	:	
Del. quantity cm3/1000 strokes	:	
Del. quantity cm3/1000 strokes Tolerance	:	5.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	5.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	5.0 2.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	5.0 2.5

EXHAUST-GAS	RECIRCULATION

Rated speed rpm Aneroid pressure	:	1000
hPa	:	1000
Del. quantity cm3/1000 strokes	:	50.0
Tolerance cm3/1000 str. +-	:	1.0
Check tolerance	•	,,,
cm3/1000s. +- Shutoff solenoid	•	2.5
Volt	:	12

### START TRANSITION

Rated speed rpm	:	550
Del. quantity cm3/1000 strokes	:	40.0
Tolerance cm3/1000 str. +-	:	10.0
Shutoff solenoid Volt	:	12

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes	:	65.0
Tolerance cm3/1000 str. +	:	17.0

Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Kmm	:	3,3
mm +-	:	+-0,1
KF mm	:	5,4
mm +-	:	+-0,2
MS mm	:	0,8
mm +-	:	+-0,2
	KF mm mm +- MS mm	mm + : KF mm : mm + : MS mm :

# POTENTIOMETER

SET

1. measurement voltage Volt : 5,0

measurement

voltage Volt : 2,31

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 29,5..31,5

Control lever

position YB mm : 47,0..57,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.04.95 Test oil : ISO 4113

Part no. : 0 460 414 114 Pump designation : VE4/11F1250L613

Customer—spec. information
Customer : IVECO-FIAT
Motor : 8045.25.210
Power KW : 63.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 2.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 800 Supply pomp

pressure bar : 6.0
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 67.5
Tolerance

cm3/1000 str. + : 0.5 Spread

cm3/1000 strokes : 3.5 Shutoff solenoid Volt : 12

olt : 1

# IDLE SETTING

cm3/1000s.

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 str. +- : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 3.5
Check tolerance

3.5

2.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1325 Del. quantity cm3/1000 strokes : 45.0

Tolerance

cm3/1000 str. + : Shutoff solenoid

Volt : 12

### STARTING FUEL DELIVERY

Del. quantity	. 00.0	- Shutoff solenoid
cm3/1000 strokes : Tolerance	: 90.0	- Volt : 12
cm3/1000 str. +-	: 25.0	- - Rated speed rpm : 400
Shutoff solenoid	. 23.0	Overflow quantity
Volt	: 12	- ccm/10s : 63.8
	·	- Tolerance
	7	- ccm/10s +-: 22.2
	7	Charle talanana
		- Check tolerance - ccm/10s +-: 22.2
INJECTION-PUMP TEST	T SPECIFICATIONS -	- Shutoff solenoid
		- Volt : 12
TIMING DEVICE CHAR	ACTERISTIC -	-
	4450	DELIVERY AND BREAKAWAY CHARACTERIST
Rated speed rpm	: 1150 -	4705
SV travel mm	: 6.4	Rated speed rpm : 1325
Tolerance mm +		- Del. quantity - cm3/1000 strokes : 45.0
Check		- Tolerance
tolerance mm +	: 0.7	- cm3/1000 str. +-: 2.0
Shutoff solenoid	4	- Check tolerance
Volt	: 12	-  cm3/1000s. + -: 6.0
	700	- Shutoff solenoid
Rated speed rpm	: 700 -	- Volt : 12
SV travel mm	: 1.8	Rated speed rpm : 1300
Tolerance mm +	<u> </u>	- Nated speed rpm . 1300 - Del. quantity
Check	. 3.4	- cm3/1000 strokes : 55.0
tolerance mm +	: 0.7	- Tolerance
Shutoff solenoid	· · · · · · · · · · · · · · · · · · ·	- cm3/1000 str. +-: 6.0
Volt	: 12 -	- Shutoff solenoid
OUDDLY DUMO DDECCUI	DE CHADACTEDICTIC	- Volt : 12
SUPPLY PUMP PRESSUI	RE CHARACTERISTIC	- - Rated speed rpm : 1420
Ratec speed rpm	: 1250	- Nated speed rpm . 1420 - Del. quantity
Supply pomp	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- cm3/1000 strokes : 1.5
	: 8.2	- Tolerance
Tolerance bar +-	: 0.3	-  cm3/1000  str. + : 1.5
Shutoff solenoid	-	- Check tolerance
Volt	: 12 -	- cm3/1000s. +-: 1.5
<b>6 5 a d 1 1 1 1 1 1 1 1 1 1</b>	. /00	- Shutoff solenoid
Rated speed rpm	: 400 -	- Volt : 12
Supply pomp pressure bar	: 4.0	- - Aneroid pressure
Tolerance bar +-		- hPa :
Shutoff solenoid	4	··· <del>·</del>
Volt	: 12 -	- LDA/
	d	- HBA stroke mm : 6,2
OVERFLOW QUANTITY	4	- Datad analy man - 4050
Dated encod nom	: 1250 -	- Rated speed rpm : 1250
Rated speed rpm : Overflow quantity	٠ ادعن	- Del. quantity - cm3/1000 strokes : 59.5
ccm/10s	: 97.2	- Tolerance
Tolerance	-	- cm3/1000 str. +-: 1.5
ccm/10s + :	: 41.6	- Check tolerance
	<del>,</del>	- cm3/1000s. +-: 3.5
Check tolerance	+	- Shutoff solenoid
ccm/10s +- :	: 41.6	- Volt : 12
		-

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 3.5 Shutoff solenoid Volt : 12  Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 67.5 Tolerance cm3/1000 str. + : 0.5 Check tolerance	
cm $3/1000$ S. $+-:$ 3.0 Shutoff solenoid	
Volt : 12	
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	
Rated speed rpm : 325 Del. quantity	
cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 str. + : 1.5 Check tolerance	
cm3/1000s. +-: 1.5	
Spread cm3/1000 strokes : 5.0	
FULL-LOAD STOP CONTROL LEVER	
Rated speed rpm : 325 Del. quantity	
cm3/1000 strokes : 1.5	
Tolerance cm3/1000 str. +-: 1.5 Spread	
cm3/1000 strokes : 5.0 Check tolerance	
cm3/1000s. + : 1.5	
Spread cm3/1000 strokes : 5.0	
IDLE DELIVERY	
Rated speed rpm : 400 Del. quantity	
cm3/1000 strokes : 1.5 Tolerance	
cm3/1000 str. +-: 1.5 Check tolerance	
cm3/1000s. +-: 1.5 Shutoff solenoid	
Volt : 12	

# START TRANSITION

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: :	250 65.0
cm3/1000 str. +-	:	15.0
Shutoff solenoid Volt	:	12
Rated speed rpm	:	150
Del. quantity cm3/1000 strokes	:	100.0

Tolerance cm3/1000 str. +-: 25.0

Shutoff solenoid Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6,2
Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,5
Tolerance mm + : +0,2
Dimension MS mm : 0,8
Tolerance mm + : +0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.95 Edition : ISO 4113 Test oil

: 0 460 485 024 Part no. Pump designation : VE5/8F2100L632

Customer-spec. information

Customer : VW

: 2.4L WK SD Motor 57.0 Power KW

### TEST BENCH REQUIREMENTS

Calibrating oil

return

temperature °C Tolerance °C ←:

Overflow

restriction mm : 0.55

0.35 Inlet press. bar : Tolerance bar +-: 0.05

Test nozzle holde : 1 688 901 000

Opening pressure

bar 147 Tolerance bar +-: 3

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

1250 Rated speed rpm :

Setting mm 2.4 Tolerance mm + : 0.2 Shutoff solenoid

12 Volt

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar 6.0 Tolerance bar +-: 0.3 Shutoff solenoid

12 Volt

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250 Rated speed rpm :

Del. quantity cm3/1000 strokes :

36.5 Tolerance

cm3/1000 str. +-:0.5 Spread

cm3/1000 strokes : 2.0

Shutoff solenoid Volt 12

### IDLE SETTING

Rated speed rpm : 415 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. +-: 1.0 Shutoff solenoid

Volt

12 Spread

2.0

cm3/1000 strokes : Check tolerance

cm3/1000s.3.0

### FULL-LOAD SPEED REGULATION

2400 Rated speed rpm :

Del. quantity cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

12 Volt

#### STARTING FUEL DELIVERY

Del guentity	l Charle
Del. quantity cm3/1000 strokes : 60.0	+ Check + tolerance mm +-: 0.7
Tolerance	Shutoff solenoid
cm3/1000 str. +: 25.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
	+ Rated speed rpm : 1790
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp + pressure bar : 7.5
SETTING	Tolerance bar +: 0.3
56172775	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
	+
Rated speed rpm : 1500	+ Rated speed rpm : 1000
Del. quantity	+ Supply pomp
cm3/1000 strokes : -7.0 Tolerance	+ pressure bar : 5.3 + Tolerance bar +-: 0.3
cm3/1000 str. + : 1.0	+ Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	1
	+ OVERFLC ANTITY
PRESSURE DIFFERENCE	+
D. I. d. annual pure	Rated speed rpm : 2100
Rated speed rpm : 1500	Overflow quantity
Del. quantity cm3/1000 strokes : -0.2	+ ccm/10s : 97.2 + Tolerance
Tolerance	+ ccm/10s + : 41.6
cm3/1000 str. +-: 0.1	+1.0
Shutoff solenoid	+ Check tolerance
Volt : 12	+ ccm/10s + : 55.5
	† Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	† Volt : 12
Rated speed rpm : 1500	† Rated speed rpm : 600
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -0.4	+ ccm/10s : 63.8
Tolerance	+ Tolerance
cm3/1000 str. +-: 0.1	+ ccm/10s +-: 22.2
Shutoff solenoid	+
Volt : 12	+ Check tolerance
	+ ccm/10s + : 34.7
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid + Volt : 12
THOSE TON TON TEST OF ECT TON TONS	1
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
	+
Rated speed rpm : 1790	Rated speed rpm : 2400
Chi Americal man	+ Del. quantity
SV travel mm : 5.4 Tolerance mm +-: 0.4	+ cm3/1000 strokes : 12.0 + Tolerance
Check	+ cm3/1000 str. +-: 2.0
tolerance mm + : 0.7	Check tolerance
Shutoff solenoid	+ cm3/1000s. $+$ : 4.0
Volt : 12	+ Shutoff solenoid
2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	+ Volt : 12
Rated speed rpm : 1000	+ Rated speed rpm : 2300
SV travel mm : 1.1	+ Rated speed rpm : 2300 + Del. quantity
Tolerance mm +-: 0.4	cm3/1000 strokes : 22.0
e e e e e e e e e e e e e e e e e e e	1

Tolerance cm3/1000 str. +-:	5.0	Spread cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-:	6.0	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt :	12	Rated speed rpm : 415
Rated speed rpm : 260 Del. quantity	00 ‡	Del. quantity cm3/1000 strokes : 1.5 Tolerance
cm3/1000 strokes : Tolerance	3.0	cm3/1000 str. + : 1.5 Spread
cm3/1000 str. +-: Check tolerance	3.0	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. +-: Shutoff solenoid	3.0	cm3/1000s. +-: 1.5 Spread
Volt :	12	cm3/1000 strokes : 5.0
Rated speed rpm : 210 Del. quantity	+	
Tolerance	31.0	
cm3/1000 str. +-: Check tolerance	1.0	CHECKING LOAD-DEPENDENT
cm3/1000s. + : Shutoff solenoid Volt :	2.2	START OF DELIVERY
	00	DELIVERY DIFFERENCE  Rated speed rpm : 1500
Del. quantity	33.8	Del. quantity cm3/1000 strokes : -6.5
Tolerance cm3/1000 str. +-:	1.5	Tolerance cm3/1000 str. + : 3.0
Check tolerance cm3/1000s. +-:	3.0	Check tolerance cm3/1000s. +-: 4.0
Shutoff solenoid Volt :	12	Shutoff solenoid Volt : 12
Rated speed rpm : 12	50 ‡	TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity cm3/1000 strokes : : Tolerance	36.5	Rated speed rpm : 1500 Del. quantity
cm3/1000 str. + : Check tolerance	0.5	cm3/1000 strokes : -0.4 Tolerance
cm3/1000s. +: Shutoff solenoid	2.2	cm3/1000 str. + : 0.1 Check tolerance
Volt :	12	cm3/1000s. +-: 0.1 Shutoff solenoid
		Volt : 12
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	‡	DELIVERY DIFFERENCE
· · · · · · · · · · · · · · · · · · ·	15 +	Rated speed rpm : 1500 Del. quantity
Del. quantity cm3/1000 strokes : Tolerance	1.5	cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
cm3/1000 str. +-: Check tolerance	1.5	Check tolerance cm3/1000s. +-: 1.5
cm3/1000s. +-:	1.5	Shutoff solenoid Volt : 12
	•	

### PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

-1.0pressure bar Tolerance bar +-: 0.2 Shutoff solenoid

12 Volt

### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm + : 0.2

Check

tolerance mm +-:

Shutoff solenoid

Volt 12

Rated speed rpm : 180

Del. quantity cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. +-: 25.0

Shutoff solenoid

Volt 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +:+0.1Dimension KF mm : 5,8 Tolerance mm +:+0,2Dimension MS mm : 1,4 Tolerance mm +-:+0.2

CONTROL LEVER POSITION

SET

Control lever

position YA ma: : 32,8..34,8

Control Lever

: 60,5..71,5 mm Ev noitizog

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.03.95 Test oil : 180 4113

Part no. : 0 460 485 027 Pump designation : VE5/8F2100L633-1

Customer-spec. information

Customer : VW

Motor : 2,41 SD f. T4

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +- : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3 Tolerance mm +-: 0.2 Shutoff solenoid

Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500 Supply pomp

pressure bar : 7.4
Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 35.5
Tolerance
cm3/1000 str. +-: 0.5
Spread

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt : 12

#### IDLE SETTING

Rated speed rpm : 415
Del. quantity
cm3/1000 strokes : 8.0

Tolerance cm3/1000 str. + : 1.0

Shutoff solenoid Volt : 12

Spread cm3/1000 strokes : 2.0

Check tolerance cm3/1000s. : 3.0

#### FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid Volt :

t : 12

### STARTING FUEL DELIVERY

Del. quantity	+ Check
cm3/1000 strokes : 60.0	tolerance mm +-: 0.7
Tolerance	Shutoff solenoid
cm3/1000 str. + : 25.0	+ Volt : 12
Shutoff solenoid	1
Volt : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
vocc . 12	T SUPPLI FUMP PRESSURE CHARACTERISTIC
	Data dama dama (1700
	+ Rated speed rpm : 1790
	+ Supply pomp
LOAD-DEPENDENT START OF DELIVERY	+ pressure bar : 8.1
SETTING	+ Tolerance bar +-: 0.3
	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
	+
Rated speed rpm : 1500	+ Rated speed rpm : 1100
Del. quantity	+ Supply pomp
cm3/1000 strokes : -7.0	pressure bar : 6.2
Tolerance	+ Tolerance bar + : 0.3
cm3/1000 str. +: 1.0	+ Shutoff solenoid
Shutoff solenoid	T 3/18/2017 SOLE   DTG   12
Volt : 12	T voit : 12
vott : 12	T OUT THE OUT OF THE OUT OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OF THE OUT OUT
DOCCOURT ATTERCAGE	+ OVERFLOW QUANTITY
PRESSURE DIFFERENCE	†
	+ Rated speed rpm : 2100
Rated speed rpm : 1500	+ Overflow quantity
Del. quantity	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2	+ Tolerance
Tolerance	+
cm3/1000 str. +-: 0.1	1
Shutoff solenoid	+ Check tolerance
Volt : 12	+ ccm/10s +-: 55.5
. 12	+ Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	Volt : 12
LINTING DEATOR LUMBER DIFFERENCE	7 0000
Dated speed non 1 1500	Total aread was . 400
Rated speed rpm : 1500	+ Rated speed rpm : 600
Del. quantity	+ Overflow quantity
cm3/1000 strokes : -1.2	+ ccm/10s : 63.8
Tolerance	+ Tolerance
cm3/1000 str. + : 0.1	+ ccm/10s + : 22.2
Shutoff solenoid	†
Volt : 12	+ Check tolerance
	+
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
	+
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
	+
Rated speed rpm : 1790	Rated speed rpm : 2400
	+ Del. quantity
SV travel mm : 6.3	+ cm3/1000 strokes : 12.0
Tolerance mm +-: 0.4	+ Tolerance
Check	- cm3/1000 str. +-: 2.0
	,
	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. +-: 4.0
Volt : 12	+ Shutoff solenoid
	† Volt : 12
Rated speed rpm : 1100	†
	+ Rated speed rpm : 2300
SV travel mm : 1.6	+ Del. quantity
Tolerance mm + : 0.4	+ cm3/1000 strokes : 22.0

D03

Tolerance cm3/1000 str. + : 5.0 Check tolerance cm3/1000s. + : 6.0 Shutoff solenoid Volt : 12	Spread cm3/1000 strokes : 5.0
Rated speed rpm : 2600 Del. quantity	
cm3/1000 strokes : 3.0 Tolerance	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000 str. +-: 3.0 Check tolerance	+ DELIVERY DIFFERENCE
cm3/1000s. +-: 3.0 Shutoff solenoid	Rated speed rpm : 1500
Volt : 12	Del. quantity - cm3/1000 strokes : -10.5
Rated speed rpm : 2100 Del. quantity	Tolerance + cm3/1000 str. +-: 3.0
cm3/1000 strokes : 29.5 Tolerance	Check tolerance + cm3/1000s. + : 4.0
cm3/1000 str. +-: 1.0 Check tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000s. + : 2.2 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	+ Rated speed rpm : 1500
Rated speed rpm : 600 Del. quantity	+ Del. quantity + cm3/1000 strokes : -1.2
cm3/1000 strokes : 33.3 Tolerance	Tolerance + cm3/1000 str. +-: 0.1
cm3/1000 str. +- : 1.5 Check tolerance	+ Check tolerance + cm3/1000s. + : 0.1
cm3/1000s. +-: 3.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	+ DELIVERY DIFFERENCE
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 1500
cm3/1000 strokes : 35.5 Tolerance	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000 str. +-: 0.5 Check tolerance	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000S. +-: 2.2 Shutoff solenoid	+ Check tolerance + cm3/1000s. ++: 1.5
Volt : 12	+ Shutoff solenoid + Volt : 12
	+ PRESSURE DIFFERENCE
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ Rated speed rpm : 1500
Rated speed rpm : 415	+ Supply pomp + pressure bar : -1.0 + Tolerance bar +-: 0.2
Del. quantity cm3/1000 strokes : 1.5	+ Shutoff solenoid
Tolerance cm3/1000 str. +-: 1.5	+ Volt : 12
Check tolerance cm3/1000s. +-: 1.5	TIMING-DEVICE TRAVEL DIFFERENCE
	+ Rated speed rpm : 1500

Tolerance mm +: 0.2
Check
tolerance mm +: 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 180 Del. quantity cm3/1000 strokes : 60.0

Tolerance

cm3/1000 str. -: 25.0

Shutoff solenoid

Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension KF mm : 5,8
Tolerance mm + : +0,2
Dimension MS mm : 1,4
Tolerance mm + : +0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

	TIMING DEVICE TRAVEL
BOSCH INJ. PUMP TEST SPECIFICATIONS	TIMING DEVICE TRAVEL
Note remarks	Rated speed rpm : 1500
MOLE LeuidLV2	I Setting mm . / 7
Refer to Service Info for test and	+ Setting mm : 4.3 + Tolerance mm +-: 0.2
adjustment instructions.	+ Shutoff solenoid
See microcard(s) W400/	
ee microcard(s) wadd)	+ Volt : 12
dition : 06.09.95	SUPPLY PUMP PRESSURE
dition : 06.09.95 est oil : ISO 4113	+
	+ Rated speed rpm : 1500
rt no. : 0 460 485 028	+ Supply pomp
mp designation : VE5/8F2100L633-2	† pressure bar : 7.4
	+ pressure bar : 7.4 + Tolerance bar + : 0.3
	+ Shutoff solenoid
stomer-spec. information	+ Volt : 12
stomer : VW	<u> </u>
ter : 2,41 SD	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
wer KW : 57.0	+ VIII MILLOUNG
· · · · · · · · · · · · · · · · · · ·	+ Rated speed rpm : 1250
	+ Del. quantity
ST BENCH REQUIREMENTS	+ cm3/1000 strokes : 36.5
DI PENADI WEMOTIVELIENIO	+ Tolerance
librating-oil	+ cm3/1000 str. +-: 0.5
turn	
	+ Spread + cm3/1000 strokes : 2.0
erance °C +-: 1	+ Shutoff solenoid
ti	+ Volt : 12
flovi	TOUE OFFERING
criction mm : 0.55	+ IDLE SETTING
	I Pated speed spm . 415
t press. bar : 0.35	+ Rated speed rpm : 415
rance bar + : 0.05	+ Del. quantity
ance par +-: U.UD	+ cm3/1000 strokes : 8.0
	+ Tolerance
	+ cm3/1000 str. + : 1.0
t nozzle holde	+ Shutoff solenoid
embly : 1 688 901 000	+ Volt : 12
	+ Spread
ning pressure	- cm3/1000 strokes : 2.0
: 147	+ Check tolerance
nce bar +-: 3	+  cm3/1000s. : 3.0
	†
4 (00 750 000	†
t lines : 1 630 750 COC	1
ide diameter : 6.00	FULL-LOAD SPEED REGULATION
	-
nside diameter : 2.00	+ Rated speed rpm : 2400
ength mm : 840	+ Del. quantity
	+ cm3/1000 strokes : 12.0
	+ Tolerance
MARKS	+  cm3/1000  str. + : 2.0
······	+ Shutoff solenoid
	+ Volt : 12
	1
	STARTING FUEL DELIVERY
NUECTION PUMP SETTING VALUES	1

Rated speed rpm : 100

INJECTION PUMP SETTING VALUES

Del. quantity	Check
cm3/1000 strokes : 60.0	tolerance mm + : 0.7
Tolerance	+ Shutoff solenoid
cm3/1000 str. + : 25.0	+ Volt : 12
Shutoff solenoid -	†
Volt : 12 -	SUPPLY PUMP PRESSURE CHARACTERISTIC
•	+
•	+ Rated speed rpm : 1790
-	+ Supply pomp
LOAD-DEPENDENT START OF DELIVERY	pressure bar : 8.1
SETTING -	Tolerance bar +-: 0.3
-	+ Shutoff solenoid
DELIVERY DIFFERENCE	† Volt : 12
·	
Rated speed rpm : 1500 -	Rated speed rpm : 1100
Del. quantity -	+ Supply pomp
cm3/1000 strokes : -7.0	pressure bar : 6.2
Tolerance -	Tolerance bar +-: 0.3
cm3/1000 str. + : 1.0	+ Shutoff solenoid
Shutoff solenoid -	<del> </del> Volt : 12
Volt : 12 -	+
-	OVERFLOW QUANTITY
PRESSURE DIFFERENCE -	<del> </del>
-	Rated speed rpm : 2100
Rated speed rpm : 1500 -	Overflow quantity
Del. quantity -	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2	+ Tolerance
Tolerance -	+ ccm/10s +→: 41.6
cm3/1000 str. +-: 0.1	+
Shutoff solenoid -	+ Check tolerance
Volt : 12	+ ccm/10s +-: 55.5
7	+ Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
<del>-</del>	+
Rated speed rpm : 1500 -	Rated speed rpm : 600
Del. quantity	Overflow quantity
cm3/1000 strokes : -1.2	- ccm/10s : 63.8
Tolerance	Tolerance
cm3/1000 str. + : 0.1	+ ccm/10s +-: 22.2
Shutoff solenoid -	+
Volt : 12 -	Check tolerance
+	ccm/10s +-: 34.7
	Shutoff solenoid
INJECTION—PUMP TEST SPECIFICATIONS	f Volt : 12
	A FI THERY AND BREAKANAY CHARACTERISTIC
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
7700	Pated and an advantage 2/00
Rated speed rpm : 1790	Rated speed rpm : 2400
	Del. quantity
SV travel mm : 6.3	cm3/1000 strokes : 12.0
Tolerance mm + : 0.4	Tolerance
Check - tolerance mm + : 0.7 -	cm3/1000 str. +-: 2.0
TO: 000000 MM +- 1   11 /	l Chaolatalanana
<del> </del>	Check tolerance
Shutoff solenoid	cm3/1000s. +-: 4.0
<del> </del>	cm3/1000S. +-: 4.0 Shutoff solenoid
Shutoff solenoid - Volt : 12 -	cm3/1000s. +-: 4.0
Shutoff solenoid	cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12
Shutoff solenoid Volt : 12  Rated speed rpm : 1100	cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2300
Shutoff solenoid - Volt : 12 -	cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12

Tolerance		+	Spread
cm3/1000 str. +-:	5.0	+	cm3/1000 strokes : 5.0
Check tolerance		1	
cm3/1000s. +-:	6.0	1	FULL-LOAD STOP CONTROL LEVER
	0.0	T	TOLL LOAD STOP CONTROL LEVER
Shutoff solenoid		+	
Volt :	12	+	Rated speed rpm : 415
		+	Del. quantity
Rated speed rpm :	2600	1	cm3/1000 strokes : 1.5
	2000	- 1	Tolerance
Del. quantity	7.0	T	
cm3/1000 strokes :	3.0	t	cm3/1000 str. +-: 1.5
Tolerance		+	Spread
cm3/1000 str. +-:	3.0	+	cm3/1000 strokes : 5.0
Check tolerance		1	Check tolerance
	3.0	- 1	cm3/1000s. +-: 1.5
cm3/1000s. +-:	3.0	Ť	
Shutoff solenoid		+	Spread
Volt :	12	+	cm3/1000 strokes : 5.0
		1	
Rated speed rpm :	2100	1	
	2100	T	
Del. quantity		<b>†</b>	
cm3/1000 strokes :	<b>30.</b> 5	+	
Tolerance		+	
cm3/1000 str. +-:	1.0	1	
Check tolerance		1	CHECKING LOAD-DEPENDENT
	2.2	T	
cm3/1000s. +-:	2.2	+	START OF DELIVERY
Shutoff solenoid		+	
Volt :	12	+	DELIVERY DIFFERENCE
		1	
Rated speed rpm :	600	1	Rated speed rpm : 1500
	900	T	•
Del. quantity		+	Del. quantity
cm3/1000 strokes :	34.3	+	cm3/1000 strokes : -10.5
Tolerance		+	Tolerance
cm3/1000 str. +-:	1.5	1	cm3/1000 str. + : 3.0
Check tolerance	1,5	}	Check tolerance
	7.0	T	
cm3/1000s. +-:	3.0	†	cm3/1000s. ÷ : 4.0
Shutoff solenoid		+	Shutoff solenoid
Volt :	12	+	Volt : 12
		1	
Rated speed rpm :	1250	1	TIMING-DEVICE TRAVEL DIFFERENCE
	1250	T	TIMING DEVICE TRAVEL DIFFERENCE
Del. quantity		T	4500
cm3/1000 strokes :	36.5	+	Rated speed rpm : 1500
Tolerance		+	Del. quantity
cm3/1000 str. +-:	0.5	1	cm3/1000 strokes : -1.2
Check tolerance		1	Tolerance
	2.2	}	
cm3/1000s. +-:	۷.۷	T	
Shutoff solenoid		†	Check tolerance
Volt :	12	+	cm3/1000s. +-: 0.1
		1	Shutoff solenoid
		1	Volt : 12
		1	
ELECTO CULTOSS		T	DELIVEDY DIECEDENCE
ELECTR. SHUTOFF		Ť	DELIVERY DIFFERENCE
CONTROL LEVER, IDLE ST	TOP	+	
		+	Rated speed rpm : 1500
Rated speed rpm :	415	1	Del. quantity
		1	cm3/1000 strokes : 1.5
Del. quantity	1 5	T	
cm3/1000 strokes :	1.5	†	Tolerance
Tolerance		+	cm3/1000 str. +-: 1.5
cm3/1000 str. +-:	1.5	+	Check tolerance
Check tolerance		1	cm3/1000s. +-: 1.5
	1.5	1	Shutoff solenoid
cm3/1000s. +:	1.0	T	
		+	Volt : 12

# PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

pressure bar -1.0Tolerance bar +-: 0.2

Shutoff solenoid

12 Volt

### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1500 0.2 Tolerance mm +-:

Check

0.6 tolerance mm +-:

Shutoff solenoid

12 Volt

180 Rated speed rpm

Del. quantity

cm3/1000 strokes :

60.0

Tolerance

cm3/1000 str. + :

25.0

Shutoff solenoid

Volt 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,8 Tolerance mm + : +-0,2 Dimension MS mm : 1,4

Tolerance mm +-: +-0,2

### CONTROL LEVER POSITION SET

Control lever

: 32,8..34,8 position YA mm

Control lever

: 60,5..71,5 position YB mm

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.06.92 Edition : ISO 4113 Test oil

: 0 460 484 010 Part no. Pump designation : VE4/8F2300R171

Customer-spec. information Customer : PSA : XUD7 Motor

### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar +-:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

#### REMARKS

#### INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 0.2 Tolerance mm + :

Shutoff solenoid 12 Volt

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp pressure bar

Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 28.5

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

### HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm :

Del. quantity

cm3/1000 strokes : 4.0

Tolerance

cm3/1000 str. +-:0.5

Shutoff solenoid

12 Volt

#### IDLE DELIVERY

Rated speed rpm :

Del. quantity

cm3/1000 strokes : 10.0

Tolerance

cm3/1000 str. +-:2.0

Spread

cm3/1000 strokes :

Shutoff solenoid

Volt 12

#### HIGH IDLE SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 10.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2440	+
Del. quantity	+ SV travel mm : 7.9
cm3/1000 strokes : 22.0	Tolerance mm + : 0.4
Tolerance cm3/1000 str. +-: 3.0	+ Check + tolerance mm +-: 0.7
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+
STARTING FUEL DELIVERY	+ Rated speed rpm : 800
Datad annual sun	† 04 to 10 to 10
Rated speed rpm : 100	+ SV travel mm : 1.2 + Tolerance mm +-: 0.4
Del. quantity cm3/1000 strokes : 62.0	+ Check
Tolerance	tolerance mm +: 0.7
cm3/1000 str. +-: 20.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	†
	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY	+ Supply pomp
SETTING	pressure bar : 6.7
	+ Tolerance bar + : 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid
Rated speed rpm : 1250	+ Volt : 12
Del. quantity	Rated speed rpm : 800
cm3/1000 strokes : -6.0	+ Supply pomp
Tolerance	+ pressure bar : 3.3
cm3/1000 str. + : 1.0	+ Tolerance bar + : 0.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
THEODORE DITTERENCE	TO VERT LOW CONTRACT OF
Rated speed rpm : 1250	Rated speed rpm : 2250
Del. quantity	Overflow quantity
cm3/1000 strokes : -0.2	+ ccm/10s : 57.2
Tolerance cm3/1000 str. +-: 0.1	+ Tolerance + ccm/10s ++ : 41.6
Shutoff solenoid	T COM 105 7 41.0
Volt : 12	Check tolerance
•	ccm/10s +-: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid
Data t annual muse 4250	+ Volt : 12
Rated speed rpm : 1250  Del. quantity	Rated speed rpm : 500
cm3/1000 strokes : -1.0	Overflow quantity
Tolerance	ccm/10s : 62.5
cm3/1000 str. +-: 0.1	+ Tolerance
Shutoff solenoid	+ ccm/10s ++: 20.8
Volt : 12	Charle talarana
	+ Check tolerance + ccm/10s + : 20.8
INJECTION-PUMP TEST SPECIFICATIONS -	Shutoff solenoid
- mild man wall i dili i i man an mami mani mani	Volt : 12
TIMING DEVICE CHARACTERISTIC	+
- 2000	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 2000 -	† Rated speed rpm : 2440
	T Nated Speca (DIII . C440

Del. quantity		+ Tolerance
cm3/1000 strokes Tolerance	: 22.0	+ cm3/1000 str. + : 1.5 + Check tolerance
cm3/1000 str. +- Check tolerance	: 3.0	cm3/1000s. +-: 3.0 + Shutoff solenoid
cm3/1000s. +- Shutoff solenoid	: 4.0	Volt : 12
Volt	: 12	Rated speed rpm : 1250
Rated speed rpm Del. quantity	: 2690	+ Del. quantity + cm3/1000 strokes : 28.5 + Tolerance
cm3/1000 strokes Check tolerance	: 7.0	+ cm3/1000 str. +-: 0.5
cm3/1000s. +-	: 3.5	+ Check tolerance + cm3/1000s. +-: 2.3
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm	: 2540	Ţ <del></del>
Del. quantity cm3/1000 strokes	: 14.5	MECHANICAL SHUTOFF
Tolerance cm3/1000 str. +-	: 3.0	Rated speed rpm : 2250 Del. quantity
Check tolerance cm3/1000s. +-	: 4.5	cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt	: 12	+ cm3/1000 str. +-: 1.5 + Check tolerance
Rated speed rpm		cm3/1000s. +-: 1.5  Shutoff solenoid
Del. quantity		Volt : 12
cm3/1000 strokes Tolerance		Ŧ <del></del>
cm3/1000 str. +- Check tolerance		+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
cm3/1000s. +- Shutoff solenoid	: 2.3	+ Rated speed rpm : 375
Volt	: 12	+ Del. quantity + cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 800	Tolerance + cm3/1000 str. +-: 1.5
cm3/1000 strokes	: 29.0	- Check tolerance
Tolerance cm3/1000 str. +-	: 1.0	+ cm3/1000s. +-: 1.5
Check tolerance cm3/1000s. +-:	: 3.0	‡
Shutoff solenoid Volt	: 12	‡
	2000	† <del></del>
Del. quantity cm3/1000 strokes :	: 28.5	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
Tolerance cm3/1000 str. +-:	: 1.0	DELIVERY DIFFERENCE
Check tolerance cm3/1000s. +-:	2.3	Rated speed rpm : 1250
Shutoff solenoid Volt :	: 12	+ Del. quantity - cm3/1000 strokes : -9.0
Rated speed rpm :	500	+ Tolerance + cm3/1000 str. +-: 2.0
Del. quantity cm3/1000 strokes :	29.5	+ Check tolerance + cm3/1000s. +-: 5.0

Shutoff solenoid		
Volt	:	12
TIMING-DEVICE TRA	VEL	DIFFERENCE
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	-1.0
cm3/1000 str. +- Check tolerance	:	0.1
cm3/1000s. +- Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	5.0
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff solenoid	:	3.0
Volt	:	12
PRESSURE DIFFEREN	CE	
Rated speed rpm Supply pomp	:	1250
pressure bar Tolerance bar +-	:	-0.8 0.3
Shutoff solenoid Volt	:	12
TIMING-DEVICE TRA	VEL	DIFFERENCE
<b>6</b> 1 1		4250
Rated speed rpm Tolerance mm +-	: :	1250 0.5
Check tolerance mm +-	:	0.6
Shutoff solenoid Volt	:	12
OTANT TRANSPITAN		
START TRANSITION		700
Rated speed rpm Del. quantity	:	300
cm3/1000 strokes Tolerance cm3/1000 str. +-	:	24.0 10.0
Shutoff solenoid	•	10.0
Volt	:	12
Rated speed rpm	:	200
Del. quantity cm3/1000 strokes	:	64.0
n17		

Tolerance
cm3/1000 str. +-: 20.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm +-: --0,1
Dimension KF mm : 5,5
Tolerance mm +-: +-0,2
Dimension MS mm : 1,4
Tolerance mm +-: +-0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 19,7..21,7

Control lever
position YB mm : 84,0..96,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.04.95 Test oil : ISO 4113

Part no. : 0 460 416 036 Pump designation : VE6/11F1250R181

Customer-spec. information Customer : IVECO-FIAT Motor : 8065.05.200 Power KW : 74.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Setting mm 5,1 Tolerance mm +-: 0.2 Shutoff solenoid 12 Volt

#### SUPPLY PUMP PRESSURE

1000 Rated speed rpm : Supply pomp pressure bar 5.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	800
Del. quantity cm3/1000 strokes	:	64.0
Tolerance cm3/1000 str. +-	:	0.5
Spread cm3/1000 strokes	:	3.5
Shutoff solenoid Volt	:	12

#### IDLE SETTING

325 Rated speed rpm : Del. quantity cm3/1000 strokes : 10.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 4.0

### FULL-LOAD SPEED REGULATION

Rated speed rpm : 1350 Del. quantity cm3/1000 strokes : 36.0 Tolerance cm3/1000 str. + :3.0 Shutoff solenoid 12

#### STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes : 120.0	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 str. + : 25.0	Rated speed rpm : 500
Shutoff solenoid Volt : 12	Overflow quantity ccm/10s : 63.8
	+ Tolerance + ccm/10s +-: 22.2
	Check tolerance
INJECTION-PUMP TEST SPECIFICATIONS	Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTERISTIC	delivery and breakaway characteristic
Rated speed rpm : 600	Rated speed rpm : 1350
SV travel mm : 1.1 Tolerance mm +-: 0.4	Del. quantity cm3/1000 strokes : 36.0
Check tolerance mm +-: 0.7 Shutoff solenoid	Tolerance cm3/1000 str. +-: 3.0 Check tolerance
Volt : 12	cm3/1000s. + : 6.0  Shutoff solenoid
Rated speed rpm : 1250	+ Volt : 12
SV travel mm : 5,8 Tolerance mm + : 0.4	+ Rated speed rpm : 1400 + Del. quantity
Check tolerance mm +-: 0.7	cm3/1000 strokes : 5.5 Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC	
Rated speed rpm : 1250	cm3/1000 strokes : 1.5 Tolerance
Supply pomp pressure bar : 6.6	+ cm3/1000 str. +-: 1.5 + Check tolerance
Tolerance bar + : 0.3 Shutoff solenoid	+ cm3/1000s. + : 1.5 + Shutoff solenoid
Volt : 12 Rated speed rpm : 500	+ Volt : 12 + Rated speed rpm : 1250
Rated speed rpm : 500 Supply pomp pressure bar : 3.4	Del. quantity  cm3/1000 strokes : 54.5
Tolerance bar +: 0.3 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 1.5
Volt : 12	Check tolerance + cm3/1000s. +-: 3.5
OVERFLOW QUANTITY	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1250 Overflow quantity	Rated speed rpm : 500
ccm/10s : 97.2 Tolerance	+ Del. quantity + cm3/1000 strokes : 61.0
ccm/10s +-: 41.6	+ Tolerance + cm3/1000 str. +-: 1.5 + Check tolerance
Check tolerance ccm/10s +-: 41.6	- cm3/1000s. + : 3.5

Shutoff solenoid Volt	: 12	‡	Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid
Rated speed rpm Del. quantity	: 800	$\frac{1}{1}$	Volt : 12
cm3/1000 strokes Tolerance	: 64.0	$\frac{1}{2}$	
cm3/1000 str. +- Check tolerance	: 0.5	$\frac{1}{1}$	
cm3/1000s. +- Shutoff solenoid	3.0	$\frac{1}{1}$	START TRANSITION
Volt	: 12	‡	Rated speed rpm : 250
**************************************		<u> </u>	Del. quantity cm3/1000 strokes : 50.0
ELECTR. SHUTOFF CONTROL LEVER, ID	LE STOP	+	Tolerance cm3/1000 str. +-: 10.0
Rated speed rpm Del. quantity	: 325	†	Shutoff solenoid Volt : 12
cm3/1000 strokes Tolerance	: 1.5	Ţ	Rated speed rpm : 150
cm3/1000 str. +- Check tolerance		+	Del. quantity cm3/1000 strokes : 120.0
cm3/1000s. +- Spread		‡	Tolerance cm3/1000 str. +-: 25.0
cm3/1000 strokes		†	Shutoff solenoid Volt : 12
FULL-LOAD STOP CO		Į	
Rated speed rpm Del. quantity		‡	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Tolerance		<del>†</del>	Dimension K mm : 3,3 Tolerance mm +-: +-0,1
cm3/1000 str. +- Spread		‡	Dimension KF mm : 5,3 Tolerance mm + : +0,2
cm3/1000 strokes Check tolerance cm3/1000s. +-		<del>†</del>	Dimension MS mm : 1,6 Tolerance mm + : +0,2
Spread		Ŧ	
cm3/1000 strokes  IDLE DELIVERY	: 5.0	† †	CONTROL LEVER POSITION SET
Rated speed rpm	: 400	‡	Control lever
Del. quantity cm3/1000 strokes Tolerance	: 1.5	<del>-</del>	position YA mm : 34,936,9
cm3/1000 str. +- Check tolerance	: 1.5	+	Control lever position YB mm : 45,751,1
cm3/1000s. +- Shutoff solenoid		+	
Volt	: 12	‡	
Rated speed rpm Del. quantity	: 360	‡	End of test-specification sheet
cm3/1000 strokes Tolerance		†	
cm3/1000 str. +-	: 3.0	<u> </u>	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.06.95 Test oil : ISO 4113

Part no. : 0 460 426 143 Pump designation : VE6/12F1150R225-23

Customer—spec. information Customer : CDC

Motor : 6 BT -5.9 IND

#### TEST BENCH REQUIREMENTS

Calibrating—oil return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar +- : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

DECINATALC OF DELIVERY

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,3
Tolerance mm +- : +-0,02
Outlet : D

#### Prestroke

(as of UT) mm : 0,3
Tolerance mm +-: --0,02
Check

tolerance mm + : + 0.04

### INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 3.6

Tolerance mm +-: 0.2

Shutoff solenoid

Volt : 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 750
Supply pomp
pressure bar : 3.8
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1150

Del. quantity
cm3/1000 strokes : 71.5

Tolerance
cm3/1000 str. + : 0.5

Spread
cm3/1000 strokes : 4.0

Shutoff solenoid

Volt : 12

### IDLE SETTING

Rated speed rpm : 375 Del. quantity cm3/1000 strokes : 11.0 Tolerance 3.0 cm3/1000 str. + :Shutoff solenoid 12 Volt Spread cm3/1000 strokes : 5.5 Check tolerance 7.0 cm3/1000s.

+	Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 1220 + Del. quantity +	OVERFLOW QUANTITY
cm3/1000 strokes : 53.0	Rated specd rpm : 1150 Overflow quantity
cm3/1000 str. +: 3.0	ccm/10s : 97.2 Tolerance
Volt : 12	ccm/10s +-: 41.6
STARTING FUEL DELIVERY	Check tolerance ccm/10s +- : 41.6
Rated speed rpm : 100	Shutoff solenoid
Del. quantity cm3/1000 strokes : 90.0	Volt : 12
Tolerance cm3/1000 str. +: 30.0	Rated speed rpm : 500 Overflow quantity
Shutoff solenoid Volt : 12	ccm/10s : ó3.8 Tolerance
‡	ccm/10s +: 22.2
‡	Check tolerance ccm/10s +-: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1100	Rated speed rpm : 1220
SV travel mm : 5.9	Del. quantity cm3/1000 strokes : 53.0
Tolerance mm +-: 0.4 Check	Tolerance cm3/1000 str. +-: 3.0
tolerance mm +: 0.7 Shutoff solenoid	Check tolerance cm3/1000s. +-: 6.0
Volt : 12 +	Shutoff solenoid Volt : 12
Rated speed rpm : 500	Rated speed rpm : 1250
SV travel mm : 1.9 + Tolerance mm + : 0.4	Del. quantity cm3/1000 strokes : 35.0
Check tolerance mm + : 0.7	Check tolerance cm3/1000s. + : 20.0
Shutoff solenoid + Volt : 12 +	Shutoff solenoid Volt : 12
SUPPLY PUMP PRESSURE CHARACTERISTIC +	Rated speed rpm : 1300
Rated speed rpm : 1100	Del. quantity cm3/1000 strokes : 1.5
Supply pomp pressure bar : 5.1	Tolerance cm3/1000 str. +-: 1.5
Tolerance bar +-: 0.3 Shutoff solenoid	Check tolerance cm3/1000s. +-: 1.5
Volt : 12	Shutoff solenoid Volt : 12
Rated speed rpm : 500 + Supply pomp	Rated speed rpm : 750
pressure bar : 2.7 Tolerance bar +-: 0.3	Del. quantity cm3/1000 strokes : 77.0

Tolerance	+ Rated speed rpm : 375
cm3/1000 str. +-: 2.0	Del. quantity
Check tolerance	+ cm3/1000 strokes : 1.5
cm3/1000s, +-: 3.0	+ Tolerance
Shutoff solenoid	- cm3/1000 str. +-: 1.5
Volt : 12	Spread
vocc . 12	- cm3/1000 strokes : 5.0
Rated speed rpm : 500	
· · · · · · · · · · · · · · · · · · ·	Check tolerance
Del. quantity	+ cm3/1000s. + : 1.5
cm3/1000 strokes : 62.5	+ Spread
Tolerance	+ cm3/1000 strokes : 5.0
cm3/1000 str. + : 4.0	+
Check tolerance	+ IDLE DELIVERY
cm3/1000s. +-: 6.0	+
Shutoff solenoid	Rated speed rpm : 450
Volt : 12	+ Del. quantity
	- cm3/1000 strokes : 2.0
Rated speed rpm : 1150	+ Tolerance
Del. quantity	+ cm3/1000 str. +-: 2.0
cm3/1000 strokes : 71.5	Check tolerance
Tolerance	- cm3/1000s. +-: 2.0
cm3/1000 str. +-: 0.5	Shutoff solenoid
Check tolerance	+ Volt : 12
cm3/1000s. +-: 3.0	†
Shutoff solenoid	†
Volt : 12	†
	+
	+
MECHANICAL SHUTOFF	+
	† START TRANSITION
Rated speed rpm : 1150	+
	•
Del. quantity	Rated speed rpm : 240
Del. quantity cm3/1000 strokes : 1.5	Rated speed rpm : 240 Del. quantity
cm3/1000 strokes : 1.5	+ Del. quantity
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5</pre>	Del. quantity cm3/1000 strokes : 40.0 Tolerance
cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Spread	Del. quantity - cm3/1000 strokes : 40.0 - Tolerance - cm3/1000 str. +- : 20.0
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Spread cm3/1000 strokes : 5.0</pre>	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance</pre>	Del. quantity - cm3/1000 strokes : 40.0 - Tolerance - cm3/1000 str. +- : 20.0
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. ← : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. ← : 1.5</pre>	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid
cm3/1000 strokes : 1.5         Tolerance         cm3/1000 str. ← : 1.5         Spread         cm3/1000 strokes : 5.0         Check tolerance         cm3/1000s. ← : 1.5         Spread	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       1.5         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12 Rated speed rpm : 130
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       5.0         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0         Shutoff solenoid	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       1.5         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       5.0         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0         Shutoff solenoid	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       1.5         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0         Shutoff solenoid         Volt       12	Del. quantity - cm3/1000 strokes : 40.0 - Tolerance - cm3/1000 str. +- : 20.0 - Shutoff solenoid - Volt : 12 - Rated speed rpm : 130 - Del. quantity - cm3/1000 strokes : 100.0 - Tolerance - cm3/1000 str. +- : 30.0
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +-: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid
cm3/1000 strokes       1.5         Tolerance       1.5         cm3/1000 str. + : 1.5         Spread       5.0         Check tolerance       1.5         cm3/1000s. + : 1.5         Spread       5.0         cm3/1000 strokes : 5.0         Shutoff solenoid         Volt       12	Del. quantity - cm3/1000 strokes : 40.0 - Tolerance - cm3/1000 str. +- : 20.0 - Shutoff solenoid - Volt : 12 - Rated speed rpm : 130 - Del. quantity - cm3/1000 strokes : 100.0 - Tolerance - cm3/1000 str. +- : 30.0
cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid
cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. ← : 1.5 Spread cm3/1000 strokes : 5.0 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 375	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +-: 30.0 Shutoff solenoid Volt : 12
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +-: 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +-: 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +-: 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +-: +-0,2
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +- : +0,2 MS1 dimension mm : 1,6
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +-: 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +-: +-0,2
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +- : +0,2 MS1 dimension mm : 1,6
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +- : +0,2 MS1 dimension mm : 1,6
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +- : +0,2 MS1 dimension mm : 1,6
cm3/1000 strokes : 1.5         Tolerance         cm3/1000 str. + : 1.5         Spread         cm3/1000s. ← : 1.5         Spread         cm3/1000 strokes : 5.0         Shutoff solenoid         Volt : 12         ELECTR. SHUTOFF         CONTROL LEVER, IDLE STOP         Rated speed rpm : 375         Del. quantity         cm3/1000 strokes : 1.5         Tolerance         cm3/1000 str. + : 1.5         Check tolerance         cm3/1000s. + : 1.5         Spread         cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. + : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. + : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm + : +0,2 MS1 dimension mm : 1,6 Tolerance mm + : +0.15/-0,1
cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0 Shutoff solenoid Volt: 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm: 375 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread	Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 20.0 Shutoff solenoid Volt : 12  Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 100.0 Tolerance cm3/1000 str. +- : 30.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension KF mm : 5,2 Tolerance mm +- : +0,2 MS1 dimension mm : 1,6

Control lever position YA mm : 35,8..37,8

Control lever position YB mm : 41,5..47,1

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.03.95 Edition : ISO 4113 Test oil

: 0 460 414 124 Part no. Pump designation : VE4/11F2250R274-1

Customer-spec. information Customer : PERKINS Motor : Prima M 80 T Power KW 60.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-: 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 450 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

1500 Rated speed rpm :

Aneroid pressure

1000 hPa

Setting mm 3.8 Tolerance ma +-:

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Supply pomp

pressure bar 7.1 Tolerance bar +-: 0.3

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. 4.0

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. 4.0

Check tolerance

cm3/1000s. 4.0

#### IDLE SETTING

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. +-:1.0

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.

3.0

### FULL-LOAD SPEED REGULATION

Rated speed rpm 2500 Pressure hPa 1000 Del. quantity cm3/1000 strokes : 40.0

Tolerance

cm3/1000 str. +-:2.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 80.0 Tolerance

cm3/1000 str. + :18.0

### INJECTION-PUMP TEST SPECIFICATIONS

### TIMING DEVICE CHARACTERISTIC

Rated speed rpm 1900 Aneroid pressure hPa 1000 SV travel mm 6.1 Tolerance mm 0.5 Check tolerance mm 0.7 Rated speed rpm 1100

Aneroid pressure 1000

SV travel mm 1.4 Tolerance mm 0.5 Check

tolerance mm

# SUPPLY PUMP PRESSURE CHARACTERISTIC

0.7

Rated speed rpm 1900 Aneroid pressure 1000 hPa Supply pomp 8.0 pressure bar Tolerance bar +-: 0.3 600

Rated speed rpm Aneroid pressure

1000 hPa Supply pomp pressure bar 5.1

0.3 Tolerance bar +-:

#### OVERFLOW QUANTITY

Rated speed rpm : 2250 Aneroid pressure 1000 hPa Overflow quantity ccm/10s 97.2 Tolerance ccm/10s 41.6 Check tolerance ccm/10s 41.6 Rated speed rpm 600 Aneroid pressure 1000 Overflow quantity ccm/10s 63.8 Tolerance ccm/10s 22.2

Check tolerance

ccm/10s 22.2

### DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm 2500 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-:2.0 Check tolerance cm3/1000s.6.0 Rated speed rpm 2450 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-:6.0

Rated speed rpm 2700 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-:1.5 Check tolerance cm3/1000s.1.5

Anomodal management		l Nel mandia
Aneroid pressure hPa :	300	+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance
LDA/ HBA stroke mm :	6.1	cm3/1000 str. +-: 1.5 Check tolerance
Del. quantity cm3/1000 strokes :		+ cm3/1000s. +-: 1.5 + Shutoff solenoid
Tolerance cm3/1000 str. +-:		+ Volt : 12
Check tolerance cm3/1000s. +-:	4.5	+ IDLE DELIVERY
Rated speed rpm :	2250	Rated speed rpm : 500
Aneroid pressure hPa : Del. quantity	1000	+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance
cm3/1000 strokes : Tolerance	66.7	- cm3/1000 str. +-: 1.5 - Check tolerance
cm3/1000 str. +-: Check tolerance	2.0	cm3/1000s. +-: 1.5
cin3/1000s. +-:	3.0	Rated speed rpm : 250 Del. quantity
Rated speed rpm : Aneroid pressure		cm3/1000 strokes : 22.0 Tolerance
hPa : Del. quantity	1000	+ cm3/1000 str. +-: 6.0 +
cm3/1000 strokes : Tolerance cm3/1000 str. +-:	58.5 4.0	<u>†</u>
Check tolerance cm3/1000s. +-:	5.0	<del>-</del>
		START TRANSITION
Rated speed rpm : Aneroid pressure hPa :	1000	Rated speed rpm : 500 Del. quantity
Del. quantity cm3/1000 strokes :		cm3/1000 strokes : 20.0
Tolerance cm3/1000 str. +-:	0.5	cm3/1000 str. +-: 10.0
Check tolerance cm3/1000s. +-:	3.0	+ Rated speed rpm : 350
		+ Del. quantity + cm3/1000 strokes : 35.0
MECHANICAL SHUTOFF		+ Tolerance + cm3/1000 str. +-: 8.0
Rated speed rpm : Aneroid pressure		<u> </u>
hPa : Del. quantity	1000	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : Tolerance		LDA/
cm3/1000 str. +-: Check tolerance		+ HBA stroke mm : 6.1 + Dimension K mm : 3,3
cm3/1000s. +-:	1.5	+ Tolerance mm +-: +-0,1 + Dimension KF mm : 6,6
ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP	Tolerance mm +-: +-0,2  MS1 dimension mm : 1,9  Tolerance mm +-: +0,15/-0,1
Rated speed rpm :	350	‡

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,0..39,0

Control lever

position YB mm : 57,0..68,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.12.92 Test oil : ISO 4113

Part no. : 0 460 414 046 Pump designation : VE4/11F1500R275

Customer-spec. information
Customer : PERKINS
Motor : 500 SERIES

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,5 Tolerance mm +-: +-0,02 Check

tolerance mm + : + 0.04

# INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1100

Setting mm : 2.7
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Supply pomp
pressure bar : 5.2
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 45.5
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

# IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 3.0

cm3/1000 strokes : Check tolerance cm3/1000s. :

KSB/AFB Volt : 12

3.0

ODEED DECLU ATTOM	- Check - tolerance mm + : 1.
SPEED REGULATION	- Shutoff solenoid - Volt : 1
n : 1550 es : 32.0	Rated speed rpm : 1500
U	- - SV travel mm : 4.
	Tolerance mm +-: 0. Check
	tolerance mm +-: 0. Shutoff solenoid
	Volt : 1
	KSB/AFB Volt : 1
	SUPPLY PUMP PRESSURE CHARAC
	- Rated speed rpm : 1500 - Supply pomp
	pressure bar : 6. Tolerance bar +-: 0.
Ŧ	Shutoff solenoid
1	- Volt : 1
	- KSB/AFB Volt : 1 -
	- Rated speed rpm : 700 - Supply pomp
	pressure bar : 3. Tolerance bar + : 0.
	Shutoff solenoid Volt : 1
	- KSB/AFB Volt : 1
	-
	- OVERFLOW QUANTITY
	<u>.</u>
	Rated speed rpm : 1450 Overflow quantity
	Overflow quantity 97.
	- Overflow quantity
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +- : 41. Check tolerance
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +- : 41. Check tolerance ccm/10s +- : 41. Shutoff solenoid
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +- : 41. Check tolerance ccm/10s +- : 41. Shutoff solenoid Volt : 1
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +- : 41. Check tolerance ccm/10s +- : 41. Shutoff solenoid
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s + : 41. Check tolerance ccm/10s + : 41. Shutoff solenoid Volt : 1 KSB/AFB Volt : 1 Rated speed rpm : 600
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s + : 41.  Check tolerance ccm/10s + : 41.  Shutoff solenoid Volt : 1  KSB/AFB Volt : 1  Rated speed rpm : 600 Overflow quantity ccm/10s : 63.
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +-: 41. Check tolerance ccm/10s +-: 41. Shutoff solenoid Volt : 1 KSB/AFB Volt : 1 Rated speed rpm : 600 Overflow quantity
	Overflow quantity ccm/10s : 97. Tolerance ccm/10s +-: 41.  Check tolerance ccm/10s +-: 41.  Shutoff solenoid Volt : 1  KSB/AFB Volt : 1  Rated speed rpm : 600 Overflow quantity ccm/10s : 63. Tolerance

Shutoff solenoid Volt : 12	+ KSB/AFB Volt : 12
KSB/AFB Volt : 12	Rated speed rpm : 600
DELIVERY AND BREAKAWAY CHARACTERISTIC	Del. quantity  cm3/1000 strokes : 20.5
	+ Tolerance
Rated speed rpm : 1550 Del. quantity	+ cm3/1000 str. + : 1.5 + Check tolerance
cm3/1000 strokes : 32.0 Tolerance	+ cm3/1000s. + : 3.0 + Shutoff solenoid
cm3/1000 str. +-: 5.0 Check tolerance	+ Volt : 12
cm3/1000s. +: 6.0 Shutoff solenoid	KSB/AFB Volt : 12
Volt : 12	Rated speed rpm : 1200
KSB/AFB Volt : 12	+ Del. quantity + cm3/1000 strokes : 45.5
Rated speed rpm : 1570	+ Tolerance + cm3/1000 str. +-: 0.5
Del. quantity cm3/1000 strokes : 16.0	+ Check tolerance + cm3/1000s. +-: 2.5
Check tolerance cm3/1000S. +-: 10.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt : 12	<u>+</u>
KSB/AFB Volt : 12	ELECTR. SHUTOFF
Rated speed rpm : 1630	CONTROL LEVER, IDLE STOP
Del. quantity	Rated speed rpm : 300
cm3/1000 strokes : 1.5 Tolerance	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000 str. + : 1.5 Check tolerance	+ Tolerance + cm3/1000 str. + : 1.5
cm3/1000S. +: 1.5 Shutoff solenoid	+ Check tolerance + cm3/1000s. + : 1.5
Volt : 12	+ KSB/AFB Volt : 12
KSB/AFB Volt : 12	+ FULL-LOAD STOP CONTROL LEVER
Rated speed rpm : 1450 Del. quantity	Rated speed rpm : 300
cm3/1000 strokes : 45.5 Tolerance	Del. quantity  cm3/1000 strokes : 1.5
cm3/1000 str. +-: 1.5 Check tolerance	Tolerance cm3/1000 str. + : 1.5
cm3/1000s. + : 3.0	+ Check tolerance
Shutoff solenoid Volt : 12	cm3/1000s. +-: 1.5
KSB/AFB Volt : 12	KSB/AFB Volt : 12
Rated speed rpm : 800	IDLE DELIVERY
Del. quantity cm3/1000 strokes : 30.0	Rated speed rpm : 430  Del. quantity
Tolerance cm3/1000 str. +-: 1.5	- cm3/1000 strokes : 1.5 - Tolerance
Shutoff solenoid Volt : 12	cm3/1000 str. +: 1.5
• • • • • • • • • • • • • • • • • • • •	I

Check tolerance cm3/1000s. +- Shutoff solenoid	:	1.5
Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm Del. quantity	:	350
cm3/1000 strokes	:	6.0
cm3/1000 str. +-	:	3.0
cm3/1000s. +- Shutoff solenoid	:	4.5
Volt	:	12

KSB/AFB Volt : 12

# START TRANSITION

Rated speed rpm Del. quantity	:	400
cm3/1000 strokes Tolerance	:	27.0
cm3/1000 str. +	:	8.0
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	300
Del guantity		555
Del. quantity cm3/1000 strokes	:	37.0
cm3/1000 strokes Tolerance cm3/1000 str. ←	:	
cm3/1000 strokes Tolerance	: :	37.0

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -Dimension KF mm : 5,4
Tolerance mm + : +0,2
MS1 dimension mm : 1,6

KSB/AFB Volt : 12

CONTROL LEVER POSITION SET

Tolerance mm +-:+0,15/-0,1

Control lever position YA mm : 37,0..39,0 Control lever position YB mm : 58,7..69,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.09.95 Edition : ISO 4113 Test oil

: 0 460 424 036 Part no. Pump designation : VE4/12F1400R279

Customer-spec. information Customer : PERKINS Motor : NA 4.40 LKW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar 172 Tolerance bar + :

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,0

Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 950

Setting mm 2.5 Tolerance mm + : 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 950

Supply pomp

pressure bar : Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

800 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 77.0

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 str. +-:2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1600

Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 3.0

Shutoff solenoid Volt : 12	+ Overflow quantity + ccm/10s : 97.2 + Tolerance
STARTING FUEL DELIVERY	+ ccm/10s +-: 41.6
Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 105.0	Check tolerance ccm/10s + : 41.6 Shutoff solenoid
Tolerance cm3/1000 str. +-: 15.0	+ Volt : 12
Shutoff solehoid Volt : 12	Rated speed rpm : 500 Overflow quantity
	ccm/10s : 63.8 Tolerance
	ccm/10s +-: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Check tolerance + ccm/10s + : 22.2 + Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	+ Volt : 12
Rated speed rpm : 800	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm : 0.8 Tolerance mm +-: 0.3	Rated speed rpm : 1600  Del. quantity
Check tolerance mm + : 0.7	- cm3/1000 strokes : 24.0 - Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 3.0
	+ Check tolerance + cm3/1000S. +-: 6.0
Rated speed rpm : 1400	+ Shutoff solenoid + Volt : 12
SV travel mm : 3.3 Tolerance mm + : 0.4	Rated speed rpm : 1500
Check tolerance mm +-: 0.7	Del. quantity cm3/1000 strokes : 57.0
Shutoff solenoid Volt : 12	+ Tolerance + cm3/1000 str. +-: 6.0
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Check tolerance + cm3/1000S. + : 7.0 + Shutoff solenoid
Rated speed rpm : 1400 Supply pomp	Volt : 12
pressure bar : 7.5 Tolerance bar +: 0.3	Rated speed rpm : 1680 - Del. quantity
Shutoff solenoid Volt : 12	cm3/1000 strokes : 1.5
	+ cm3/1000 str. +-: 1.5 + Check tolerance
,	+ cm3/1000s. +-: 1.5
Rated speed rpm : 500 Supply pomp	+ Shutoff solenoid + Volt : 12
pressure bar : 3.7 Tolerance bar + : 0.3	+ Rated speed rpm : 1400
Shutoff solenoid Volt : 12	+ Del. quantity + cm3/1000 strokes : 71.5 + Tolerance
OVERFLOW QUANTITY	+ cm3/1000 str. +-: 1.5
Rated speed rpm : 1400	+ Check tolerance + cm3/1000s. +-: 3.0

E02

Shutoff solenoid				
oriatori soteriora		· 1	Rated speed rpm	: 400
Volt		12 T		. 400
VOLL	•	12	Del. quantity	
		+	cm3/1000 strokes	: 8.5
Rated speed rpm	: 500	+	Tolerance	
Del. quantity		1	cm3/1000 str. +-	: 3.5
		T		. 5.5
cm3/1000 strokes	: 00	+	Check tolerance	
Tolerance		+	cm3/1000s. +-	: 4.5
cm3/1000 str. +-	: 1	.5	Shutoff solenoid	
Check tolerance		1	Volt	: 12
cm3/1000s. +-	. 7	.o I	VOCC	• 12
	; 5	.0 +		
Shutoff solenoid		+	Rated speed rpm	: 350
Volt	:	12	Del. quantity	
	•	1	cm3/1000 strokes	: 17.5
Deded asset ass	. 000	. <u>T</u>		. 17.5
Rated speed rpm	: 800	<del>†</del>	Tolerance	
Del. quantity		+	cm3/1000 str. +-	: 3.5
cm3/1000 strokes	: 77	'.0 <del> </del>	Check tolerance	
Tolerance	•	1	cm3/1000s. +-	: 5.0
cm3/1000 str. +-		T T		
	: U	+	Shutoff solenoid	
Check tolerance		+	Volt	: 12
cm3/1000s. +-	: 3	·.o +		
Shutoff solenoid	_	1		
Volt	•	12 I		
VOLL	•	16 +		
		+		
	<del></del>	<del> </del>		
MECHANICAL SHUTOF	F	1		
1.6011/11/20/12 01/01/01	•	\$	CTART TRANSTITAN	
		Ť	START TRANSITION	
Rated speed rpm	: 1400	+		
Del. quantity		+	Rated speed rpm	: 250
cm3/1000 strokes	. 1	.5	Del. quantity	
	• '	.,		. 50.0
Tolerance		_	cm3/1000 strokes	: 50.0
c <b>m</b> 3/1000 str. +-	: 1	.5	Tolerance	
Check tolerance		+	cm3/1000 str. +-	: 15.0
cm3/1000s. +-	. 1	.5	Shutoff solenoid	
Shutoff solenoid	• '	. 7		. 12
		T	Volt	: 12
		12		
Volt	:	<del>-</del>		
volt	:	<u> </u>		
volt	:		Rated speed rom	• 150
	:	+	Rated speed rpm	: 150
ELECTR. SHUTOFF			Del. quantity	
		<del></del> ‡	Del. quantity cm3/1000 strokes	
ELECTR. SHUTOFF		<del> </del>	Del. quantity cm3/1000 strokes	
ELECTR. SHUTOFF CONTROL LEVER, ID	LE STOP	<del> </del>	Del. quantity cm3/1000 strokes Tolerance	: 115.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm	LE STOP	<del> </del>	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +-	: 115.0 : 15.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity	LE STOP		Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid	: 115.0 : 15.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	LE STOP	<del> </del>	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +-	: 115.0 : 15.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	LE STOP : 300	.5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid	: 115.0 : 15.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	LE STOP : 300	.5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid	: 115.0 : 15.0
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	LE STOP : 300		Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	: 115.0 : 15.0 : 12
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: 300 : 1 : 1	.5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid	: 115.0 : 15.0 : 12
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	: 300 : 1 : 1	.5	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS	: 115.0 : 15.0 : 12 STMENT DIMENSIONS
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	: 300 : 1 : 1	.5	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	: 115.0 : 15.0 : 12 STMENT DIMENSIONS
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +	LE STOP : 300 : 1 : 1	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. + Shutoff solenoid Volt  ASSEMBLY AND ADJUST	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance	LE STOP : 300 : 1 : 1	.5 .5 .5	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +-	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +  FULL-LOAD STOP CO	LE STOP : 300 : 1 : 1 NTROL LEV	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +-  FULL-LOAD STOP CO  Rated speed rpm	LE STOP : 300 : 1 : 1 NTROL LEV	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +  FULL-LOAD STOP CO	LE STOP : 300 : 1 : 1 NTROL LEV	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +-  FULL-LOAD STOP CO  Rated speed rpm Del. quantity	LE STOP : 300 : 1 : 1 NTROL LEV : 300	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1
ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +- FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes	LE STOP : 300 : 1 : 1 NTROL LEV : 300	.5 .5 .5	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1	.5 .5 .5 ER	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1	.5 .5 .5	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm + Dimension KF mm Dimension MS mm Tolerance mm +-	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1	.5 .5 .5 ER	Del. quantity cm3/1000 strokes Folerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	: 300 : 1 : 1 NTROL LEV : 300 : 1	.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm Tolerance mm +- CONTROL LEVER POSE	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1  : 1	.5 .5 .5 ER	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm + Dimension KF mm Dimension MS mm Tolerance mm +-	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-  FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1  : 1	.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm Tolerance mm +- CONTROL LEVER POSE	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1  : 1	.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm Tolerance mm +- CONTROL LEVER POSE	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2
ELECTR. SHUTOFF CONTROL LEVER, ID  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-  FULL-LOAD STOP CO  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	LE STOP  : 300  : 1  : 1  NTROL LEV  : 300  : 1  : 1	.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .	Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS Dimension K mm Tolerance mm +- Dimension KF mm Dimension MS mm Tolerance mm +- CONTROL LEVER POSE	: 115.0 : 15.0 : 12 STMENT DIMENSIONS : 3,3 : +-0,1 : KOT : 1,1 : +-0,2

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 42,7..51,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.09.94 Test oil : ISO 4113

Part no. : 0 460 484 089 Pump designation : VE4/8F2300R317-7

Customer—spec. information
Customer : RENAULT
Motor : F8Q - 742
Power KW : 47.0

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.3
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 4.8
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250

Rated speed rpm : Del. quantity

cm3/1000 strokes : 31.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

# IDLE DELIVERY

Rated speed rpm : 410

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 str. + : 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HIGH IDLE SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 9.0

Tolerance	
cm3/1000 str. +-: 2.0 +- Shutoff solenoid +-	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Pated aread area . 2000
Rated speed rpm : 2450	Rated speed rpm : 2000
Del. quantity + cm3/1000 strokes : 26.0 +	SV travel mm : 8.0 Tolerance mm +-: 0.4
Tolerance	Tolerance mm +: 0.4 Check
cm3/1000 str. +: 3.0 +	tolerance mm +-: 0.7 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 750
Rated speed rpm : 100	SV travel rim : 2.0
Del. quantity	Tolerance mm +-: 0.4
cm3/1000 strokes : 55.0	Check tolerance mm +-: 0.7
cm3/1000 str. + : 15.0	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12	Rated speed rpm : 310
1	nated speed ipili . The
+	SV travel mm : 1.8
LOAD-DEPENDENT START OF DELIVERY  SETTING  +	Tolerance mm +-: 1.2 Check
25111110	tolerance mm + : 1.2
DELIVERY DIFFERENCE	Shutoff solenoid
Rated speed rpm : 1250	Volt : 12
Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -8.7	
Tolerance + : 1.0 +	Rated speed rpm : 500
Shutoff solenoid	SV travel mm : 3.1
Volt : 12	Tolerance mm + : 1.2 Check
PRESSURE DIFFERENCE	tolerance mm +-: 1.2
Rated speed rpm : 1250 +	Shutoff solenoid Volt : 12
Del. quantity	. 12
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
cm3/1000 str. +: 0.1 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 2000 Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 6.7
+ + + + + + + + + + + + + + + + + + + +	Tolerance bar +-: 0.3
Rated speed rpm : 1250 + Del. quantity +	Shutoff solenoid Volt : 12
cm3/1000 strokes : -0.4	
Tolerance	Rated speed rpm : 750
cm3/1000 str. +-: 0.1 +- Shutoff solenoid +-	Supply pomp pressure bar : 3.4
Volt : 12	Tolerance bar +-: 0.3
+	

Shutoff solenoid Volt : 12	+ Tolerance - cm3/1000 str. +-: 1.0
OVERFLOW QUANTITY	+ Check tolerance + cm3/1000s. +-: 2.3 + Shutoff solenoid
Rated speed rpm : 2250 Overflow quantity	Volt : 12
ccm/10s : 97.2 Tolerance	Rated speed rpm : 1625 Del. quantity
ccm/10s +-: 41.6	- cm3/1000 strokes : 31.2 - Tolerance
Check tolerance ccm/10s +-: 41.6	cm3/1000 str. + : 1.5 Check tolerance
Shutoff solenoid Volt : 12	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Rated speed rpm : 750	+ Volt : 12
Overflow quantity ccm/10s : 63.8	Rated speed rpm : 2000  Del. quantity
Tolerance ccm/10s +-: 22.2	- cm3/1000 strokes : 31.3 - Tolerance - cm3/1000 str. +- : 1.0
Check tolerance ccm/10s +: 22.2	Check tolerance cm3/1000s. +: 2.3
Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Rated speed rpm : 750
Rated speed rpm : 2450	+ Del. quantity + cm3/1000 strokes : 31.6
Del. quantity cm3/1000 strokes : 26.0	Tolerance - cm3/1000 str. +-: 1.5
Tolerance cm3/1000 str. +-: 3.0 Check tolerance	+ Check tolerance + cm3/1000s. +-: 2.3 + Shutoff solenoid
cm3/1000s. +-: 4.0 Shutoff solenoid	Volt : 12
Volt : 12	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 2650 Del. quantity	cm3/1000 strokes : 31.5 Tolerance
cm3/1000 strokes : 11.0 Check tolerance	+ cm3/1000 str. +-: 0.5 Check tolerance
cm3/1000s. +-: 5.0 Shutoff solenoid	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Volt : 12 Rated speed rpm : 2950	+ Volt : 12
Rated speed rpm : 2950  Del. quantity  cm3/1000 strokes : 2.5	ELECTR. SHUTOFF
Tolerance cm3/1000 str. +-: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s. +-: 2.5	Rated speed rpm : 410 Del. quantity
Shutoff solenoid Volt : 12	cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm : 2250	- cm3/1000 str. + : 1.5 - Check tolerance
Del. quantity cm3/1000 strokes : 32.5	

Spread cm3/1000 strokes : 5.0	+ PRESSURE DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	+ Rated speed rpm : 1250 + Supply pomp
Rated speed rpm : 410 Del. quantity	pressure bar : -0.4 Tolerance bar +- : 0.2
<pre>cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5</pre>	+ Shutoff solenoid + Volt : 12
Spread cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance cm3/1000s. + : 1.5	Rated speed rpm : 1250 Tolerance mm + : 0.2
Spread cm3/1000 strokes : 5.0	- Check - tolerance mm +-: 0.3
	+ Shutoff solenoid + Volt : 12
	START TRANSITION
CHECKING LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 310 Del. quantity
DELIVERY DIFFERENCE	cm3/1000 strokes : 30.0
Rated speed rpm : 1250	+ cm3/1000 str. + : 15.0 + Shutoff solenoid
Del. quantity cm3/1000 strokes : -11.0 Tolerance	+ Volt : 12
cm3/1000 str. + : 2.0 Check tolerance	Rated speed rpm : 210 Del. quantity
cm3/1000s. +-: 2.0 Shutoff solenoid	- cm3/1000 strokes : 60.0 - Tolerance
Volt : 12	+ cm3/1000 str. + : 15.0 + Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	E + Volt : 12
Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -0.4	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance cm3/1000 str. + : 0.1	Dimension K mm : 3,3 Tolerance mm +- : +-0,1
Check tolerance cm3/1000s. +-: 0.1	+ Dimension KF mm : 5,5 + Tolerance mm +-: +-0,2
Shutoff solenoid Volt : 12	+ Dimension MS mm : 1,3 + Tolerance mm +- : +-0,2
DELIVERY DIFFERENCE	+ MICROSWITCH
Rated speed rpm : 1250 Del. quantity	+ SET
cm3/1000 strokes : 5.0 Tolerance	+ mm : 0,83,0 + : 7,68,4
cm3/1000 str. +-: 3.0 Check tolerance	T
cm3/1000s. +-: 3.0	+ CONTROL LEVER POSITION + SET

Control lever position YA mm : -

Control lever position YB mm : ~

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05,07,95 Test oil : ISO 4113

: 0 460 484 090 Part no. Pump designation : VE4/8F2300R317-8

Customer-spec. information Customer : RENAULT Motor : F8Q - 724 Power KW 47.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 4.3 Tolerance mm 0.2 Shutoff solenoid 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar 4.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 31.5

Tolerance

cm3/1000 str. → : 0.5

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

Volt 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 3.0 Tolerance

cm3/1000 str. +-: Shutoff solenoid

Volt 12

2.0

# IDLE DELIVERY

Rated speed rpm : 410 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:2.0

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid Volt 12

HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. +: 2.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2450 Del. quantity	SV travel mm : 8.0
cm3/1000 strokes : 26.0 Tolerance	Tolerance mm +-: 0.4 Check
cm3/1000 str. +-: 3.0 +	tolerance mm +-: 0.7 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 750
Rated speed rpm : 100 +	SV travel mm : 2.0 Tolerance mm + : 0.4
cm3/1000 strokes : 55.0 + Tolerance +	Check tolerance mm +-: 0.7
cm3/1000 str. +: 15.0 } Shutoff solenoid	Shutoff solenoid Volt : 12
Volt : 12	Rated speed rpm : 310
LOAD-DEPENDENT START OF DELIVERY	SV travel mm : 1.8 Tolerance mm +-: 1.2
SETTING	Check tolerance mm + : 1.2
DELIVERY DIFFERENCE	Shutoff solenoid Volt : 12
Rated speed rpm : 1250 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -8.7 Tolerance	Rated speed rpm : 500
cm3/1000 str. +: 1.0 + Shutoff solenoid +	SV travel mm : 3.1
Volt : 12	Tolerance mm +-: 1.2 Check
PRESSURE DIFFERENCE	tolerance mm +-: 1.2 Shutoff solenoid
Rated speed rpm : 1250 + Del. quantity +	Volt : 12
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
cm3/1000 str. ←: 0.1 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 2000 Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 6.7 Tolerance bar +-: 0.3
Rated speed rpm : 1250 + cm3/1000 strokes : -0.4	Shutoff solenoid Volt : 12
Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 750 Supply pomp
Shutoff solenoid Volt : 12	pressure bar : 3.4 Tolerance bar +-: 0.3
+	

Shutoff solenoid Volt : 12	† Tolerance
	cm3/1000 str. + : 1.0 Check tolerance
OVERFLOW QUANTITY	+ cm3/1000S. +-: 2.3 + Shutoff solenoid
Rated speed rpm : 2250 Overflow quantity	+ Volt : 12
ccm/10s : 97.2 Tolerance	+ Rated speed rpm : 1625 + Del. quantity
ccm/10s ←: 41.6	cm3/1000 strokes : 31.2 Tolerance
Check tolerance ccm/10s +-: 41.6	+ cm3/1000 str. +-: 1.5 + Check tolerance
Shutoff solenoid Volt : 12	- cm3/1000s. +-: 2.3 - Shutoff solenoid
	Volt : 12
Overflow quantity	Rated speed rpm : 2000
ccm/10s : 63.8 Tolerance	+ Del. quantity - cm3/1000 strokes : 31.3
ccm/10s + : 22.2	+ Tolerance + cm3/1000 str. +-: 1.0
Check tolerance ccm/10s +-: 22.2	+ Check tolerance + cm3/1000s. +-: 2.3
Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12
DELIVERY AND BREAKAWAY CHARACTERISTIC	+
	Del. quantity
Rated speed rpm : 2450 Del. quantity	- cm3/1000 strokes : 31.6 - Tolerance
cm3/1000 strokes : 26.0 Tolerance	+ cm3/1000 str. + : 1.5 + Check tolerance
cm3/1000 str. +-: 3.0 Check tolerance	+ cm3/1000s. + : 2.3 + Shutoff solenoid
cm3/1000s. +-: 4.0 Shutoff solenoid	+ Volt : 12
Volt : 12	Rated speed rpm : 1250 Del. quantity
Rated speed rpm : 2650	+ cm3/1000 strokes : 31.5
Del. quantity cm3/1000 strokes : 11.0	+ Tolerance + cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s.	+ Check tolerance + cm3/1000s. +-: 2.3
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2950	+
Del. quantity cm3/1000 strokes : 2.5	+ ELECTR. SHUTOFF
Tolerance cm3/1000 str. +-: 2.5	CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s. +: 2.5	Rated speed rpm : 410 Del. quantity
Shutoff solenoid	+ cm3/1000 strokes : 1.5
	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : 2250 Del. quantity	+ Check tolerance + cm3/1000s. +-: 1.5
cm3/1000 strokes : 32.5	+

Spread	+ Supply pomp
cm3/1000 strokes : 5.0	pressure bar : -0.4 Tolerance bar +-: 0.2
	+ Tolerance bar +-: 0.2
FULL-LOAD STOP CONTROL LEVER	+ Shutoff solenoid
TOTAL BOND OTON CONTINUE EEVEN	
Data diamand ann . /40	+ Volt : 12
Rated speed rpm : 410	†
Del. quantity	+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5	<del> </del>
Tolerance	+ Rated speed rpm : 1250
cm3/1000 str. + : 1.5	+ Tolerance mm + : 0.2
Spread	+ Check
cm3/1000 strokes : 5.0	
	tolerance mm + : 0.3
Check tolerance	+ Shutoff solenoid
cm3/1000s. → : 1.5	
Spread	<del> </del>
cm3/1000 strokes : 5.0	1
	+ START TRANSITION
	T START TRANSPITON
	<del>-</del> +
CHECKING LOAD-DEPENDENT	+ Rated speed rpm : 310
START OF DELIVERY	- Del. quantity
	+ cm3/1000 strokes : 30.0
DELIVERY DIFFERENCE	+ Tolerance
	+ cm3/1000 str. $+$ : 15.0
Detect energy . 1250	
Rated speed rpm : 1250	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : -11.0	+
Tolerance	<del> </del>
cm3/1000 str. +-: 2.0	Rated speed rpm : 210
Check tolerance	+ Del. quantity
	T vet. quantity
cm3/1000s. +-: 2.0	}- cm3/1000 strokes : 60.0
Shutoff solenoid	† Tolerance
Volt : 12	+ cm3/1000 str. +-: 15.0
	+ Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	+ Volt : 12
ITHING NEATON INMAND ATTICKNOOP	12
Betsel energy was 1250	Ţ
Rated speed rpm : 1250	
Del. quantity	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : -0.4	+
Tolerance	Dimension K mm : 3,3
cm3/1000 str. + : 0.1	+ Tolerance mm + : +-0,1
Check tolerance	+ Dimension KF mm: : 5,5
cm3/1000s. +-: 0.1	+ Tolerance mm +-: +-0,2
Shutoff solenoid	+ Dimension MS mm : 1,3
Volt : 12	+ Tolerance mm +-: +-0,2
	<u> </u>
DELIVERY DIFFERENCE	1
respondent to the transfer to the state of t	MICROCLITICA
Debad seed out : 4250	+ MICROSWITCH
Rated speed rpm : 1250	+ SET
Del. quantity	+
cm3/1000 strokes : 5.0	+ mm : 0,83,0
Tolerance	: 7,68,4
cm3/1000 str. + : 3.0	1
Check tolerance	
cm3/1000s. +-: 3.0	†
Shutoff solenoid	End of test-specification sheet
Volt : 12	+
• • • • • • • • • • • • • • • • • • • •	1
PRESSURE DIFFERENCE	1
INCOOUND DIFFERENCE	T
	<b>T</b>

Rated speed rpm : 1250

	+
BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1250
Note remarks	F Setting mm : 3.7
	+ Setting mm : 3.7 + Tolerance mm +-: 0.2
Refer to Service Info for test and	+ Shutoff solenoid
adjustment instructions.	+ Volt : 12
See microcard(s) W400/	+
Edition : 16.03.95	† SUPPLY PUMP PRESSURE
Test oil : ISO 4113	Rated speed rpm : 1250
7000 010 7 200 7110	+ Supply pomp
Part no. : 0 460 484 031	Supply pomp + pressure bar : 6.0
Pump designation : VE4/8F21GOR357	† Tolerance bar +-: 0.3
	+ Shutoff solenoid
Customer and information	+ Volt : 12
Customer-spec. information	FULL - LOAD DELTH HITHOUT BOOKT BRECKURE
Customer : VW Motor : 028.A 1.91. 45KW	† FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
1 0200A 1.7(. 450W	Rated speed rpm : 1250
	+ Del. quantity
TEST BENCH REQUIREMENTS	+ cm3/1000 strokes : 36.0
	Tolerance
Calibrating-oil	+ cm3/1000 str. +-: 0.5
return	+ Spread
temperature °C : 45 Tolerance °C +- : 1	+ cm3/1000 strokes : 2.0 + Shutoff solenoid
Toterance C +	+ Volt : 12
Overflow	I vocc : 12
restriction ma : 0.55	1
	+ HOUSING-FIXED IDLE SPRING
	+ RESIDUAL QUANTITY SETTING
Inlet press. bar : 0.35	+
Tolerance bar ←: 0.05	+ Rated speed rpm : 550
	+ Del. quantity + cm3/1000 strokes : 2.5
Test nozzle holde	Tolerance
assembly : 1 688 901 000	- cm3/1000 str. +-: 0.5
	+ Shutoff solenoid
Opening pressure	+ Volt : 12
ber : 147	+
Tolerance bar +-: 3	† IDLE DELIVERY
	Poted aread 1/25
Test lines : 1 680 750 000	+ Rated speed rpm : 425 + Del. quantity
1636 CITIES - 1 000 120 000	- cm3/1000 strokes : 8.0
Outside diameter : 6.00	Tolerance
	+ cm3/1000 str. +-: 1.0
x inside diameter : 2.00	+ Spread
x Length mm : 840	+ cm3/1000 strokes : 2.0
	+ Shutoff solenoid
DEMADICS	+ Volt : 12
REMARKS	HIGH IDLE SETTING
	THE SELLTING
	Rated speed rpm : 500
	+ Del. quantity
INJECTION PUMP SETTING VALUES	+ cm3/1000 strokes : 8.0
	+ Tolerance
TIMING DEVICE TRAVEL	+ cm3/1000 str. $+$ : 1.0

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Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 1700
Rated speed rpm : 2400 Del. quantity	SV travel mm : 5.8 Tolerance mm + : 0.4
cm3/1000 strokes : 12.0 Tolerance	Check tolerance mm +-: 0.7
cm3/1000 str. + : 2.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	Rated speed rpm : 750
STARTING FUEL DELIVERY	SV travel mm : 1.3
Rated speed rpm : 100 Del. quantity	Tolerance mm +-: 0.4 Check
cm3/1000 strokes : 60.0 Tolerance	tolerance mm + : 0.7 Shutoff solenoid
cm3/1000 str. + : 25.0 Shutoff solenoid	+ Volt : 12
Volt : 12	+ Rated speed rpm : 750
	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY SETTING	Rated speed rpm : 1850 Supply pomp
DELIVERY DIFFERENCE	<pre>+ pressure bar : 7.4 + Tolerance bar + : 0.3 + Shutoff solenoid</pre>
Rated speed rpm : 1250 Del. quantity	Volt : 12
cm3/1000 strokes : -7.5 Tolerance	Rated speed rpm : 750 Supply pomp
cm3/1000 str. +- : 1.0 Shutoff solenoid	+ pressure bar : 4.8 + Tolerance bar +-: 0.3
Volt : 12	Shutoff solenoid Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 1850
cm3/1000 strokes : -0.2 Tolerance	+ Overflow quantity + ccm/10s : 97.2
cm3/1000 str. +-: 0.1 Shutoff solenoid	+ Tolerance + ccm/10s +-: 41.6
Volt : 12	+ Check tolerance
TIMING-DEVICE TRAVEL DIFFERENCE	+ ccm/10s + : 55.5 + Shutoff solenoid
Rated speed rpm : 1250 Del. quantity	+ Volt : 12
cm3/1000 strokes : -0.4 Tolerance	+ Rated speed rpm : 750 + Overflow quantity
cm3/1000 str. + : 0.1 Shutoff solenoid	+ ccm/10s : 63.8 + Tolerance
Volt : 12	+ ccm/10s +-: 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Check tolerance + ccm/10s +-: 34.7

Shutoff solenoid Volt : 12	‡	Shutoff solenoid Volt :	12
DELIVERY AND BREAKAWAY CHARA	ACTERISTIC +	Rated speed rpm : Del. quantity	1250
Rated speed rpm : 2400 Del. quantity	$\frac{1}{2}$	cm3/1000 strokes : Tolerance	36.0
cm3/1000 strokes : 12.0 Tolerance	·	cm3/1000 str. +-: Check tolerance	0.5
cm3/1000 str. +-: 2.0 Check tolerance	)	cm3/1000s. +-: Shutoff solenoid	2.2
cm $3/1000$ S. $+:$ 4.0 Shutoff solenoid	<del> </del>	Volt :	12
Volt : 12	<del>†</del>		
Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 3.0	, ‡	ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP
cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. +-: 3.0	1	Rated speed rpm : Del. quantity	425
Shutoff solenoid Volt : 12	1	cm3/1000 strokes : Tolerance	1.5
Rated speed rpm : 2250	+	cm3/1000 str. +- : Check tolerance	1.5
Del. quantity cm3/1000 strokes : 23.0	, <del>,</del>	cm3/1000s. +-:	1.5
Tolerance cm3/1000 str. + : 5.0	, ‡	FULL-LOAD STOP CONTRO	
Check tolerance cm3/1000S. + : 6.0 Shutoff solenoid	) -	Rated speed rpm : Del. quantity cm3/1000 strokes :	425 1.5
Volt : 12	2	Tolerance cm3/1000 str. +-:	1.5
Rated speed rpm : 1850 Del. quantity	<u> </u>	Check tolerance cm3/1000s. +-:	1.5
cm3/1000 strckes : 33.0 Tolerance	+		
cm3/1000 str. +-: 1.0 Check tolerance	<del>}</del>		
cm3/1000s. +-: 2.2 Shutoff soleroid Volt : 12	+	RESIDUAL QUANTITY	500
Volt : 12 Rated speed rpm : 500	<u> </u>	Rated speed rpm : Del. quantity cm3/1000 strokes :	500 3.5
Del. quantity cm3/1000 strckes : 32.0	1	Tolerance cm3/1000 str. +:	1.0
Tolerance cm3/1000 str. + : 2.5	+	Check tolerance cm3/1000s. +-:	2.5
Check tolerance cm3/1000s. +-: 5.0	+	Shutoff solenoid Volt :	12
Shutoff solenoid Volt : 12	<b>;</b>		
Rated speed rpm : 750 Del. quantity	‡	CHECKING LOAD-DEPENDENT OF DELIVERY	ENT
cm3/1000 strokes : 32.0 Tolerance	) [	DELIVERY DIFFERENCE	
cm3/1000 str. + : 1.5 Check tolerance	;	Rated speed rpm :	1250
cm3/1000s. +-: 3.0	) +		. —

Del. quantity	† Tolerance
cm3/1000 strokes : -8.0	+ cm3/1000 str. +-: 10.0
Tolerance	+ Shutoff solenoid
cm3/1000 str. + : 3.0	+         Volt         :         12
Check tolerance	1
cm3/1000s, $+$ : 4.0	1
Shutoff solenoid	Rated speed rpm : 180
Volt : 12	+ Del. quantity
<b>VOCC</b> . 12.	+ cm3/1000 strokes : 60.0
TIMING DEVICE TRAVEL DIECEDENCE	
TIMING-DEVICE TRAVEL DIFFERENCE	+ Tolerance
D	+ cm3/1000 str. +-: 25.0
Rated speed rpm : 1250	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1 <b>000</b> strokes : -0.4	+
Tolerance	
cm3/1000 str. +-: 0.1	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance	+
cm3/1000s. $+: 0.1$	Dimension K mm : 3,3
Shutoff solenoid	+ Tolerance mm +-: +0,1
Volt : 12	+ Dimension KF mm : 5,3
. 12	+ Tolerance mm + : +0,2
DELIVERY DIFFERENCE	
NEFTACK! DILLEUFIACE	Dimension MS mm : 1,3
Dated annual ram . 1050	† Tolerance mm +-: +-0,2
Rated speed rpm : 1250	<b>†</b>
Del. quantity	†
cm3/1000 strokes : 1.5	†
Tolerance	+ CONTROL LEVER POSITION
cm3/1000 str. +: 1.5	+ SET
Check tolerance	+
cm3/1000s. +-: 1.5	+
Shutoff solenoid	+ Control lever
Volt : 12	position YA mm : 20,022,0
	+
PRESSURE DIFFERENCE	+ Control lever
PRESSURE DIFFERENCE	Control lever
	Control lever position YB mm : 60,571,5
Rated speed rpm : 1250	
Rated speed rpm : 1250 Supply pomp	
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7	
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar + : 0.2	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar + : 0.2 Shutoff solenoid	
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar + : 0.2	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar + : 0.2 Shutoff solenoid	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar + : 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12  START TRANSITION	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380	position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp pressure bar : -0.7 Tolerance bar +: 0.2 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250  SV travel mm : -1.2 Tolerance mm +: 0.2 Check tolerance mm +: 0.5 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity	position YB mm : 60,571,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.06.95 Test oil : ISO 4113

Part no. : 0 460 484 102 Pump designation : VE4/8F2100R357-1

Customer—spec. information Customer : VW

Motor : 1.9L T4 SD Power KW : 45.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar +- : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.0
Tolerance bar +-: 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 36.0
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 str. +: 0.5
Shutoff solenoid
Volt : 12

# IDLE DELIVERY

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 str. +-: 1.0
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

# HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 8.0

Tolerance +	-
cm3/1000 str. +-: 1.0 +	- INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	- TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	- Rated speed rpm : 1700
Rated speed rpm : 2400 - Del. quantity	- SV travel mm : 5.8
cm3/1000 strokes : 12.0 - Tolerance	- Tolerance mm +-: 0.4 - Check
cm3/1000 str. + : 2.0 Shutoff solenoid	- tolerance mm +-: 0.7 - Shutoff solenoid
Volt : 12	- Volt : 12
STARTING FUEL DELIVERY	- Rated speed rpm : 750
Rated speed rpm : 100 - Del. quantity	- SV travel mm : 1.3 - Tolerance mm +-: 0.4
cm3/1000 strokes : 60.0	- Check
Tolerance cm3/1000 str. + : 25.0	- Shutoff solenoid
Shutoff solenoid	- Volt : 12
†	- Rated speed rpm : 750
LOAD-DEPENDENT START OF DELIVERY	- SUPPLY PUMP PRESSURE CHARACTERISTIC
SETTING	- Rated speed rpm : 1850 - Supply pomp
DELIVERY DIFFERENCE	- pressure bar : 7.4 - Tolerance bar +- : 0.3
Rated speed rpm : 1250  Del. quantity	- Shutoff solenoid - Volt : 12
cm3/1000 strokes : -7.5	- - Rated speed rpm : 750
cm3/1000 str. + : 1.0 - Shutoff solenoid	- Supply pomp - pressure bar : 4.8
Volt : 12	- Tolerance bar +-: 0.3 - Shutoff solenoid
PRESSURE DIFFERENCE	- Volt : 12
Rated speed rpm : 1250 Del. quantity	- OVERFLOW QUANTITY
cm3/1000 strokes : -0.2	- Rated speed rpm : 1850 - Overflow quantity
cm3/1000 str. +: 0.1	- ccm/10s : 97.2 - Tolerance
Volt : 12	- ccm/10s +-: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	- Check tolerance - ccm/10s +-: 55.5
Rated speed rpm : 1250 Del. quantity	- Shutoff solenoid - Volt : 12
cm3/1000 strokes : -0.4	Rated speed rpm : 750
cm3/1000 str. + : 0.1	- Nated speed ip 750 - Overflow quantity - ccm/10s : 63.8
Volt : 12	- Tolerance
+	- ccm/10s +- : 22.2

			1	Tolonomoo	
Check tolerance			Ī	Tolerance cm3/1000 str. +-:	1 5
ccm/10s +	:	34.7	1	Check tolerance	1.5
Shutoff solenoid	•		1	cm3/1000s. +-:	3.0
Volt	:	12	+	Shutoff solenoid	
			+	Volt :	12
DELIVERY AND BREAK	KAWAY	CHARACTERISTIC	+		
	_		+	Rated speed rpm :	1250
Rated speed rpm	: 2	400	†	Del. quantity	74.5
Del. quantity cm3/1000 strokes		10.0	†	cm3/1000 strokes :	36.0
Tolerance	:	12.0	<b>T</b>	Tolerance cm3/1000 str. +-:	0.5
cm3/1000 str. +-		2.0	I	Check tolerance	0.5
Check tolerance	•	2.0	$\mathbf{I}$	cm3/1000s. +-:	2.2
cm3/1000s. +-	:	4.0	1	Shutoff solenoid	
Shutoff solenoid			1	Volt :	12
Volt	:	12	+		· <del>-</del>
			+		
Rated speed rpm	: 2	650	+		
Del. quantity		7.0	†	ELECTR. SHUTOFF	
cm3/1000 strokes	:	3.0	†	CONTROL LEVER, IDLE	STOP
Check tolerance cm3/1000s. +-		3.0	†	Dated anord was	/ 25
Shutoff solenoid	•	5.0	Ī	Rated speed rpm : Del. quantity	425
Volt	•	12	I	cm3/1000 strokes :	1.5
	•	15	1	Tolerance	1.5
Rated speed rpm	: 2	250	+	cm3/1000 str. +-:	1.5
Del. quantity			+	Check tolerance	
cm3/1000 strokes	:	23.0	+	cm3/1000s. +-:	1.5
Tolerance			+	Spread	
cm3/1000 str. +		5.0	†	cm3/1000 strokes :	5.0
Check tolerance		. 0	†	5111 1 0 4 0 0 T 0 0 0 0 1 T 1	
cm3/1000S. +- Shutoff solenoid		6.0	†	FULL-LOAD STOP CONTI	ROL LEVER
Volt		12	Ī	Rated speed rpm :	/ 25
VOLE	•	14	I	Del. quantity	427
Rated speed rpm	: 1	850	1	cm3/1000 strokes :	1.5
Del. quantity	•		1	Tolerance	
cm3/1000 strokes	:	33.0	1	cm3/1000 str. +-:	1.5
Tolerance			+	Spread	
cm3/1000 str. +-	:	1.0	+	cm3/1000 strokes :	5.0
Check tolerance			t	Check tolerance	
cm3/1000s. +-	:	2.2	+	cm3/1000s. +:	1.5
Shutoff solenoid		40	†	Spread	5.0
Volt	:	12	†	cm3/1000 strokes :	5.0
Rated speed rpm	•	500	Ī		
Del. quantity	:	J <b>U</b> U	I		
cm3/1000 strokes	•	32.0	I		
Tolerance	•	32.0	1	RESIDUAL QUANTITY	
cm3/1000 str. +-	:	2.5	+		
Check tolerance			+	Rated speed rpm :	500
cm3/1000s. +-	:	5.0	+	Del. quantity	
Shutoff solenoid		10	+	cm3/1000 strokes :	3.5
Volt	:	12	†	Tolerance	4.0
Pated annot		750	†	cm3/1000 str. + :	1.0
Rated speed rpm Del. quantity	:	750	Ī	Check tolerance cm3/1000s. +-:	2.5
cm3/1000 strokes	•	32.0	I	Shutoff solenoid	د, ع
511107 1000 311 UNES	•	JC.0	1	Volt :	12
			ı		16

	ì
CHECKING LOAD-DEPENDENT START OF DELIVERY	START TRANSITION
DELIVERY DIFFERENCE	+ Rated speed rpm : 380 Del. quantity
Rated speed rpm : 1250	+ cm3/1000 strokes : 28.0
Del. quantity cm3/1000 strokes : -8.0	+ Tolerance + cm3/1000 str. +-: 10.0
Tolerance cm3/1000 str. +-: 3.0 Check tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000s. +-: 4.0 Shutoff solenoid	Rated speed rpm : 180
Volt : 12	+ Del. quantity + cm3/1000 strokes : 60.0
TIMING-DEVICE TRAVEL DIFFERENCE	+ Tolerance + cm3/1000 str. +-: 25.0
Rated speed rpm : 1250 Del. quantity	Shutoff solenoid Volt : 12
cm3/1000 strokes : -0.4 Tolerance	12
cm3/1000 str. ←: 0.1 Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +-: 0.1 Shutoff solenoid	Dimension K mm : 3,3 Tolerance mm + : +0,1
Volt : 12	+ Dimension KF mm : 5,3 + Tolerance mm → : +-0,2
DELIVERY DIFFERENCE	Dimension MS mm : 1,3 Tolerance mm + : +0,2
Rated speed rpm : 1250 Del. quantity	1
cm3/1COC strokes : 1.5 Tolerance	CONTROL LEVER POSITION
cm3/1000 str. +-: 1.5 Check tolerance	SET
cm3/1000s. +-: 1.5 Shutoff solenoid	Control Lever
Volt : 12	+ position YA mm : 20,022,0
PRESSURE DIFFERENCE	Control lever position YB mm : 60,571,5
Rated speed rpm : 1250 Supply pomp	‡
pressure bar : -0.7 Tolerance bar +-: 0.2	
Shutoff solenoid Volt : 12	+ End of test-specification sheet +
TIMING-DEVICE TRAVEL DIFFERENCE	‡
Rated speed rpm : 1250	<u> </u>
SV travel mm : -1.2 Tolerance mm +-: 0.2	$\frac{1}{2}$
Check tolerance mm + : 0.5	$\frac{1}{1}$
total diffe min + U.J	T

Shutoff solenoid Volt

: 12

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.06.95 Test oil : ISO 4113

: 0 460 426 167 Part no. Pump designation: VE6/12F1000R369--1

Customer-spec. information Customer : CDC

: 6BT- 5.9 INU. Fiotor

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar 250 Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,5 Tolerance mm +-:+-0.02Outlet |

Prestroke

(as of UT) mm : 0,2 Tolerance mm +-: --0,02

Check

tolerance mm + : + -0.04

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting inm 3.7 Tolerance mm +-: 0.2

Shutoff solenoid

Volt 24

# SUPPLY PUMP PRESSURE

Rated speed rpm : 750 Supply pomp

pressure bar 3.9 0.3

Tolerance bar + : Shutoff solenoid

Volt 24

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900 Del. quantity

74.9 cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

Volt 24

#### IDLE SETTING

Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 7.0

Tolerance

cm3/1000 str. +-: 3.0 Shutoff solenoid

Volt 24

Spread cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 7.0

FULL-LOAD SPEED REGULATION	Shutoff solenoid Volt : 24
Rated speed rpm : 1045	OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : 63.0 Tolerance	Rated speed rpm : 1000 Overflow quantity
cm3/1000 str. ←: 3.0 Shutoff solenoid	ccm/10s : 97.2 Tolerance
Volt : 24	ccm/10s + : 41.6
STARTING FUEL DELIVERY	Check tolerance ccm/10s +-: 41.6
Rated speed rpm : 100 + Del. quantity +	Shutoff solenoid Volt : 24
cm3/1000 strokes : 100.0 Tolerance	Rated speed rpm : 500
cm3/1000 str. +-: 30.0 Shutoff sclenoid	Overflow quantity ccm/10s : 63.8
Volt : 24	Tolerance ccm/10s +-: 22.2
	Check tolerance ccm/10s   : 22.2 Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	Volt : 24
TIMING DEVICE CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm : 1000	Rated speed rpm : 1045 Del. quantity
SV travel mm : 5.2 Tolerance mm +-: 0.4	cm3/1000 strokes : 63.0 Tolerance
Check tolerance mm +-: 0.7	cm3/1000 str. +-: 3.0 Check tolerance
Shutoff solenoid Volt : 24	cm3/1000s. +-: 6.0 Shutoff solenoid
Rated speed rpm : 500	Volt : 24
SV travel mm : 1.8	Rated speed rpm : 1100 Del. quantity
Tolerance mm + : 0.4 Check	cm3/1000 strokes : 35.0 Check tolerance
tolerance mm +-: 0.7 Shutoff solenoid	cm3/1000s. $+$ : 10.0 Shutoff solenoid
Volt : 24	Volt : 24
SUPPLY PUMP PRESSURE CHARACTERISTIC	Rated speed rpm : 1170 Del. quantity
Rated speed rpm : 1000 + Supply pomp	cm3/1000 strokes : 1.5 Tolerance
pressure bar : 4.9 Tolerance bar +-: 0.3	cm3/1000 str. + : 1.5 Check tolerance
Shutoff solenoid + Volt : 24 +	cm3/1000s. +-: 1.5 Shutoff solenoid
Rated speed rpm : 500	Volt : 24
Supply pomp pressure bar : 2.9	Rated speed rpm : 1000 Del. quantity
Tolerance bar +-: 0.3 +	cm3/1000 strokes : 73.5

Talanana		1 No.1
Tolerance cm3/1000 str. +-:	1.5	+ Del. quantity + cm3/1000 strokes : 1.5
Check tolerance	۱۰۷	+ Tolerance
cm3/1000s. +-:	3.0	+ cm3/1000 str. +-: 1.5
Shutoff solenoid	5.0	Check tolerance
Volt :	24	+ check toterance + cm3/1000s. +-: 1.5
vott :	24	<b>\</b>
Optical conceal comm	750	+ Spread
	730	+ cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes :	75.9	THE LOAD STOP CONTROL LEVER
	73.7	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-:	1.5	T Dated aread was
Check tolerance	1	Rated speed rpm : 500
cm3/1000s. +-:	3.5	+ Del. quantity + cm3/1000 strokes : 1.5
Shutoff solenoid	3.7	Tolerance
Volt :	24	- cm3/1000 str. + : 1.5
,	LT	Spread
Rated speed rpm :	500	+ cm3/1000 strokes : 5.0
Del. quantity	200	Check tolerance
cm3/1000 strokes :	62.7	cm3/1000s. + : 1.5
Tolerance	OL. ?	Spread
cm3/1000 str. +-:	4.0	cm3/1000 strokes : 5.0
Check tolerance	4.0	1 01137 1000 361 0863 . 3.0
cm3/1000s. +-:	6.0	IDLE DELIVERY
Shutoff solenoid		The beerven
Volt :	24	Rated speed rpm : 540
		+ Del. quantity
Rated speed rpm :	900	+ cm3/1000 strokes : 1.5
Del. quantity		+ Tolerance
cm3/1000 strokes :	74.9	$+$ cm3/1000 str. $\div$ : 1.5
Tolerance		+ Check tolerance
cm3/1000 str. + :	0.5	+ cm3/1000s. $+$ : 1.5
Check tolerance		+ Shutoff solenoid
cm3/1000s. +-:	3.0	+ Volt : 24
Shutoff solenoia		+
Volt :	24	+
		+
		<del></del> <del> </del>
MECHANICAL SHUTOFF		†
On and an and an an	4000	START TRANSCITION
Rated speed rpm :	1000	+ START TRANSITION
Del. quantity cm3/1000 strokes :	1.5	+ Rated speed rpm : 250
Tolerance	1.0	+ Rated speed rpm : 250 + Del. quantity
cm3/1000 str. +:	1.5	cm3/1000 strokes : 45.0
Spread	1.5	Tolerance
cm3/1000 strokes :	5.0	+ cm3/1000 str. +-: 15.0
Check tolerance	J. 2	+ Shutoff solenoid
cm3/1000s. +-:	1.5	+ Volt : 24
Spread		+
cm3/1000 strokes :	5.0	<del>}</del>
Shutoff solenoid		Rated speed rpm : 130
Volt :	24	+ Del. quantity
		+ cm3/1000 strokes : 110.0
	<del></del>	
ELECTR. SHUTOFF		+ cm3/1000 str. +-: 30.0
CONTROL LEVER, IDLE S	TOP	+ Shutoff solenoid
	500	+ Volt : 24
Rated speed rpm :	500	†
		†

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm + : +0,2
Dimension MS mm : 1,0
Tolerance mm + : +0,02

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 35,7..41,3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.09.95 Test oil : ISO 4113

Pert no. : 0 460 416 067 Pump designation : VE6/11F1150R394

Customer—spec. information Customer : IVECO-FIAT Motor : 8065.25.220 Power KW : 78.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar +- : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Setting mm : 2.4
Tolerance mm ÷ : 0.2

Shutoff solenoid Volt : 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 4.6
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

1000 Rated speed rpm : Aneroid pressure 1000 Del. quantity cm3/1000 strokes : 84.0 Tolerance cm3/1000 str. +: Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.4.0 Shutoff solenoid Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 74.5
Tolerance
cm3/1000 str. +-: 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s : 4.0

### IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 str. +-: 2.0
Shutoff solenoid
Volt : 12

Spread		-	<del> </del>			
cm3/1000 strokes Check tolerance	:	3.0	Rated speed Aneroid pres		1150	
cm3/1000s.	:	4.0	hPa Supply pomp	:	1000	
		•	pressure bar	:	6.4	
		•	Tolerance ba Shutoff sole		0.3	
FULL-LOAD SPEED RE	EGULATIO	N -	Volt	:	12	
Rated speed rpm	: 126		Rated speed		550	
Pressure hPa Del. quantity	: 1	000 -	Aneroid pres hPa	sure .	1000	
cm3/1000 strokes	: 5	0.0	Supply pomp	•		
Tolerance cm3/1000 str. +-		3.0	pressure bar Tolerance ba		3.9 0.3	
Shutoff solenoid	•	•	Shutoff sole			
Volt	:	12 -	Volt	:	12	
STARTING FUEL DELE	EVERY	-	OVERFLOW QUA	NTITY		
Rated speed rpm	: 10	0 -	Rated speed		500	
Del. quantity cm3/1000 strokes	: 11	0.0	Overflow qua ccm/10s	ntity :	63.8	
Tolerance			Tolerance	·		
cm3/1000 str. +- Shutoff solenoid	: 2	5.0	ccm/10s	+ :	22.2	
Volt	:	12 -	Check tolera	nce		
		-	ccm/10s	+- :	22.2	
		_	L Shutoff cole	noid		
		-	Shutoff sole	noid :	12	
		- -	Volt	:	_	
INJECTION-PUMP TES	ST SPECI	FICATIONS -	Volt Rated speed Aneroid pres	rpm :	1150	
		-	Volt Rated speed Aneroid pres	: rpm : sure :	_	
INJECTION-PUMP TES	RACTERIS	TIC -	Volt Rated speed Aneroid pres hPa Overflow qual ccm/10s	: rpm : sure :	1150	
TIMING DEVICE CHAR	RACTERIS: 100	TIC -	Volt Rated speed Aneroid pres hPa Overflow qual ccm/10s Tolerance	: rpm : sure :	1150 1000 97.2	
TIMING DEVICE CHAR	RACTERIS	TIC -	Volt Rated speed Aneroid pres hPa Overflow qual ccm/10s	: rpm : sure :	1150 1000	
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa	RACTERIS: 100	TIC - 0 - 000 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral	rpm : sure : ntity : +: nce	1150 1000 97.2 41.6	
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa SV travel mm	RACTERIS : 100 : 1	TIC -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleran	rpm : sure : ntity : +: nce +:	1150 1000 97.2	
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check	RACTERIS : 100 : 1	TIC - 0 - 000 - 3.5 - 0.4 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral	rpm : sure : ntity : +: nce +:	1150 1000 97.2 41.6	
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +-	RACTERIS : 100 : 1	TIC - 0 - 000 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral ccm/10s Shutoff soles	rpm : sure : ntity : +: nce +: noid :	1150 1000 97.2 41.6 41.6	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check	RACTERIS : 100 : 1	TIC - 0 - 000 - 3.5 - 0.4 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral ccm/10s Shutoff soler Volt  DELIVERY AND	rpm : sure : ntity : + : nce + : noid : BREAKA	1150 1000 97.2 41.6 41.6 12 WAY CHARAC	TERISTIC
TIMING DEVICE CHARRATED SPEED TO THE CHARRATED TO THE CHARTATED TO THE CHARRATED TO THE CHARTATED TO THE CHARRATED TO THE CHARRATED TO THE CHARTATED TO THE CHA	RACTERIS : 100 : 1	TIC	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral ccm/10s Shutoff soler Volt  DELIVERY AND	rpm : sure : ntity : + : nce + : noid : BREAKA	1150 1000 97.2 41.6 41.6 12 WAY CHARAC	TERISTIC
TIMING DEVICE CHARRATED Speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC	Volt  Rated speed Aneroid preschea Overflow qual ccm/10s Tolerance ccm/10s Check toleran ccm/10s Shutoff soler Volt  DELIVERY AND Rated speed Aneroid preschea	rpm : sure : ntity :  nce + : noid : BREAKA rpm : sure :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hFa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt Rated speed rpm	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC	Rated speed Aneroid preschapa Overflow qual ccm/10s Tolerance ccm/10s Check toleran ccm/10s Shutoff soler Volt DELIVERY AND Rated speed Aneroid preschapa Del. quantit	rpm : sure : ntity : nce + : noid : BREAKA rpm : sure : y	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa  SV travel mm	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC - 0 - 000 - 3.5 - 0.4 - 0.9 - 12 - 0 - 000 - 1.2 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleran ccm/10s Shutoff soler Volt  DELIVERY AND Rated speed Aneroid press hPa Del. quantity cm3/1000 str	rpm : sure : ntity : nce + : noid : BREAKA rpm : sure : yokes :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000 50.0	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +-	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC - 0 - 000 - 3.5 - 0.4 - 0.9 - 12 - 0 - 000 -	Volt  Rated speed Aneroid preschala Overflow qualecm/10s Tolerancecm/10s Check tolerancecm/10s Shutoff soled Volt  DELIVERY AND Rated speed Aneroid preschala Del. quantitecm3/1000 streem3/1000 streem3	rpm : sure : ntity : nce + : noid : BREAKA rpm : sure : yokes :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hFa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC - 0 - 000 - 3.5 - 0.4 - 0.9 - 12 - 0 - 000 - 1.2 -	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral ccm/10s Shutoff soles Volt  DELIVERY AND Rated speed Aneroid press hPa Del. quantity cm3/1000 str Tolerance cm3/1000 str Check toleral cm3/1000s.	rpm : sure : ntity :  nce + : noid : BREAKA rpm : yokes : .nce + :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000 50.0	TERISTIC
TIMING DEVICE CHARRATED SPENDS TO LETANCE THAT TOLERANCE THAT THAT TOLERANCE THAT THAT TOLERANCE THAT THAT TOLERANCE THAT THAT TOLERANCE THAT THAT THAT THAT THAT THAT THAT THA	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleran ccm/10s Shutoff soler Volt  DELIVERY AND Rated speed Aneroid press hPa Del. quantity cm3/1000 str Tolerance cm3/1000 str Check toleran cm3/1000s. Shutoff soler	rpm : sure : ntity :  nce + : noid : BREAKA rpm : yokes : .nce + :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000 50.0 3.0 6.0	TERISTIC
TIMING DEVICE CHAR Rated speed rpm Aneroid pressure hFa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +	RACTERIS : 100 : 1 : : : : : : : : : : : : : : : : : :	TIC	Volt  Rated speed Aneroid press hPa Overflow qual ccm/10s Tolerance ccm/10s Check toleral ccm/10s Shutoff soles Volt  DELIVERY AND Rated speed Aneroid press hPa Del. quantity cm3/1000 str Tolerance cm3/1000 str Check toleral cm3/1000s.	rpm : sure : ntity :  nce + : noid : BREAKA rpm : yokes : .nce + :	1150 1000 97.2 41.6 41.6 12 WAY CHARAC 1260 1000 50.0 3.0	TERISTIC

Aneroid pressure hPa :	1000	‡	Rated speed rpm : Aneroid pressure	500
Del. quantity cm3/1000 strokes :	34.5	†	hPa : Del. quantity	1000
Check tolerance cm3/1000s. +-:	5.0	1	cm3/1000 strokes : Tolerance	86.5
Shutoff solenoid Volt :	12	+	cm3/1000 str. + :	2.0
		Ŧ	cm3/1000s. +-:	3.5
Rated speed rpm : Aneroid pressure		Ŧ	Shutoff solenoid Volt :	12
hPa : Del. quantity	1000	Ŧ	Rated speed rpm :	1000
cm3/1000 strokes : Tolerance	1.5	+	Aneroid pressure hPa :	1000
cm3/1000 str. +-: Check tolerance	1.5	+	Del. quantity cm3/1000 strokes :	84.0
cm3/1000s. + : Shutoff solenoid	1.5	+	Tolerance cm3/1000 str. +-:	Ü.5
Volt :	12	‡	Check tolerance cm3/1000s. +-:	3.5
Rated speed rpm : Aneroid pressure	500	1	Shutoff solenoid Volt :	12
hPa :	350	<u> </u>		
LDA/ HBA stroke mm :	4.7	1	ELECTR. SHUTOFF	
Del. quantity cm3/1000 strokes :	79.5	Ì	CONTROL LEVER, IDLE	STOP
Tolerance cm3/1000 str. +-:	0.5	+	Rated speed rpm : Del. quantity	325
Check tolerance cm3/1000s. +:		Ŧ	cm3/1000 strokes :	1.5
Shutoff solenoid	4.0	Ŧ	Tolerance cm3/1000 str. +-:	1.5
Volt :	12	Ŧ	Check tolerance cm3/1000s. +-:	1.5
Rated speed rpm : Aneroid pressure	1150	‡	Spread cm3/1000 strokes :	5.0
hPa : Dei. quantity	1000	‡	FULL-LOAD STOP CONT	ROL LEVER
cm3/1000 strokes : Tolerance		+	Rated speed rpm :	325
cm3/1000 str. + : Check tolerance	1.5	‡	Del. quantity cm3/1000 strokes :	1.5
cm3/1000s. +-: Shutoff solenoid	3.5	‡	Tolerance cm3/1000 str. +-:	1.5
Volt :	12	‡	Spread cm3/1000 strokes :	5.0
Rated speed rpm : Aneroid pressure	650	+	Check tolerance cm3/1000s. +-:	1.5
hPa : Del. quantity	1000	†	Spread cm3/1000 strokes :	5.0
cm3/1000 strokes : Tolerance	89.0	+	IDLE DELIVERY	
cm3/1000 str. +-: Check tolerance	2.0	1		420
cm3/1000s. +-: Shutoff solenoid	3.5	†	Del. quantity cm3/1000 strokes :	
Volt :	12	1	Tolerance cm3/1000 str. +-:	
		1		, • •

Check tolerance cm3/1000s. +: 1.5 Shutoff solenoid Volt : 12

# START TRANSITION

Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 70.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 150
Del. quantity
cm3/1000 strokes : 110.0

Tolerance

cm3/1000 str. + : 25.0

Shutoff solenoid

Volt : 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 4.7

Dimension K mm : 3,3
Tolerance mm + : +0,1
Dimension MS mm : 1,1
Tolerance mm + : +0,2

# CONTROL LEVER POSITION

SET

Control lever

position YA mm : 34,9..36,9

Contrôl lever

position YB mm : 48,2..53,8

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.11.95 : ISO 4113 Test oil

: 0 460 426 179 Part no. Pump designation: VE6/12F1250R406

Customer-spec. information : PERKINS Customer

: Q20 Phaser T6.60 Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + :

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

bar 250 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,25 Tolerance mm +-: +-0,02

Check

+-: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Aneroid pressure

hPa 1500

Setting mm 1.6 Tolerance mm +-: 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Aneroid pressure

1500

Supply pomp

pressure bar 6.2 Tolerance bar +-: 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

700 Rated speed rpm

Aneroid pressure

1500

Del. quantity

cm3/1000 strokes : 84.5

Tolerance

cm3/1000 str. + : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.5.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 64.5

Tolerance

cm3/1000 str. +-:0.5

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 10.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 5.0

F02

Check tolerance	+ Aneroid pressure
cm3/1000s. : 5.0	+ hPa : 1500
	+ Supply pomp
	+ pressure bar : 5.0
	† Tolerance bar +-: 0.3
FULL-LOAD SPEED REGULATION	T OVERFLOW QUANTITY
LOCK -FOND SLEED KEROPHITOM	I OVERPLOW GOANTITY
Rated speed rpm : 1400	Rated speed rpm : 500
Pressure hPa : 1500	+ Overflow quantity
Del. quantity	+ ccm/10s : 63.8
cm3/1000 strokes : 40.0	+ Tolerance
Tolerance	+ ccm/10s +-: 22.2
cm3/1000 str. +-: 3.0	† 5
CTARTING FUEL RELIGION	+ Check tolerance
STARTING FUEL DELIVERY	+ ccm/10s +-: 22.2
Rated speed rpm : 100	T Rated speed rpm : 1200
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 130.0	+ hPa : 1500
Tolerance	+ Overflow quantity
cm3/1000 str. +-: 30.0	+ ccm/10s : 97.2
	- Tolerance
	+ ccm/10s + : 41.6
	+ -
	+ Check tolerance
INJECTION—PUMP TEST SPECIFICATIONS	+ ccm/10s +-: 41.6
TWOECTION FORF TEST SPECIFICATIONS	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMENO ACUERO AUADA ATERTATA	I DECTACK AND DIVENIMAL CHARACTERISTIC
IIMING DEVICE CHARACTERISTIC	+
TIMING DEVICE CHARACTERISTIC	+ Rated speed rpm : 1400
Rated speed rpm : 1100	+ Aneroid pressure
Rated speed rpm : 1100 Aneroid pressure	Aneroid pressure + hPa : 1500
Rated speed rpm : 1100	Aneroid pressure hPa : 1500 Del. quantity
Rated speed rpm : 1100 Aneroid pressure hPa : 1500	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 40.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 40.0 Tolerance
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4	Aneroid pressure  hPa : 1500  Del. quantity  cm3/1000 strokes : 40.0  Tolerance  cm3/1000 str. +- : 3.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check	Aneroid pressure  hPa : 1500  Del. quantity  cm3/1000 strokes : 40.0  Tolerance  cm3/1000 str. +-: 3.0  Check tolerance
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check	Aneroid pressure  hPa : 1500  Del. quantity  cm3/1000 strokes : 40.0  Tolerance  cm3/1000 str. +- : 3.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000S. +-: 6.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000S. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000S. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5 Check tolerance
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000S. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure  hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure  hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350  Rated speed rpm : 1350  Aneroid pressure
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350  Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0  Tolerance
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Supply pomp	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350  Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0  Tolerance cm3/1000 strokes : 65.0  Tolerance cm3/1000 str. +- : 8.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Supply pomp pressure bar : 7.2	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350  Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 65.0  Tolerance cm3/1000 strokes : 65.0  Tolerance cm3/1000 str. +- : 8.0  Check tolerance
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Supply pomp	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +- : 8.0
Rated speed rpm : 1100 Aneroid pressure hPa : 15C0  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Supply pomp pressure bar : 7.2 Tolerance bar + : 0.3	Aneroid pressure  hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000S. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 3.5 Check tolerance cm3/1000S. +- : 3.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +- : 8.0 Check tolerance cm3/1000s. +- : 10.0
Rated speed rpm : 1100 Aneroid pressure hPa : 1500  SV travel mm : 2.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 900 Aneroid pressure hPa : 1500  SV travel mm : 0.8 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Supply pomp pressure bar : 7.2	Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 40.0  Tolerance cm3/1000 str. +- : 3.0  Check tolerance cm3/1000s. +- : 6.0  Rated speed rpm : 1480 Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 3.5  Check tolerance cm3/1000s. +- : 3.5  Rated speed rpm : 1350  Aneroid pressure hPa : 1500  Del. quantity cm3/1000 strokes : 65.0  Tolerance cm3/1000 strokes : 65.0  Tolerance cm3/1000 str. +- : 8.0  Check tolerance

Aneroid pressure hPa : Del. quantity	700	IDLE DELIVERY
cm3/1000 strokes : Tolerance cm3/1000 str. +-:	79.0 0.5	Rated speed rpm : 420
Check tolerance cm3/1000s. +-:	3.5	Del. quantity - cm3/1000 strokes : 1.5 - Tolerance
Rated speed rpm :	1200	+ cm3/1000 str. +-: 1.5 + Check tolerance
Aneroid pressure hPa :	1500	cm3/1000s. +-: 1.5
Del. quantity cm3/1000 strokes :	89.5	+ Rated speed rpm : 350 + Del. quantity
Tolerance cm3/1000 str. +-: Check tolerance	1.5	- cm3/1000 strokes : 5.0 - Tolerance - cm3/1000 str. +- : 3.0
cm3/1000s. +-:	3.5	Check tolerance cm3/1000s. +-: 5.0
Rated speed rpm : Del. quantity	700	‡
cm3/1000 strokes : Tolerance cm3/1000 str. +-:	60.5 2.5	<u>†</u>
Check tolerance cm3/1000s. +-:	4.0	START TRANSITION
Rated speed rpm :	1000	Rated speed rpm : 230
Aneroid pressure hPa : Del. quantity	1500	+ Del. quantity + cm3/1000 strokes : 70.0 + Tolerance
cm3/1000 strokes : Tolerance	83.5	cm3/1000 str. +: 20.0
cm3/1000 str. + : Check tolerance	1.5	Rated speed rpm : 130
cm3/1000s. +-:	3.5 700	+ Del. quantity + cm3/1000 strokes : 140.0
Rated speed rpm : Aneroid pressure hPa :	1500	Tolerance cm3/1000 str. +-: 30.0
Del. quantity cm3/1000 strokes :	84.5	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Tolerance cm3/1000 str. +-:	0.5	Dimension KF mm : 6,0
Check tolerance cm3/1000s. + :	3.5	Tolerance mm + : +-0,02 + MS1 dimension mm : 2,0 + Tolerance mm + : +0,15/-0,1
MECHANICAL SHUTOFF		‡
Rated speed rpm : Aneroid pressure	1200	CONTROL LEVER POSITION SET
hPa : Del. quantity	1500	
cm3/1000 strokes : Tolerance	1.5	Control lever position YA mm : 37,239,2
cm3/1000 str. + : Check tolerance	1.5	Control lever
cm3/1000s. +-:	1.5	+ position YB mm : 52,460,6 +

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 05.04.95 Edition : ISO 4113 Test oil

: 0 460 424 075 Part no. Pump designation : VE4/12F1350R407

Customer-spec. information

Customer : IVECO-FIAT

Motor : 8040.25.4000 TC

Power KW 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-:

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

Tolerance bar + :

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm: 0,3 Tolerance mm +:+0.04

Check

tolerance mm +-: +-0.06

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Aneroid pressure

1000

Setting mm 1.6 Tolerance mm +-: 0.2

Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Aneroid pressure

hPa 1000 Supply pomp

pressure bar

6.3 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700 Aneroid pressure

1000

Del. quantity

79.5 cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:0.5

Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s.5.0

Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 46.0

Tolerance

0.5

cm3/1000 str. +-:

Shutoff solenoid

Volt

24

Check tolerance

cm3/1000s.5.0

IDLE SETTING

		1
Rated speed rpm	: 350	SV travel mm : 4.1
Del. quantity	. 330	Tolerance mm +-: 0.4
cm3/1000 strokes	: 15.0	+ Check
Tolerance		tolerance mm +-: 0.9
cm3/1000 str. +	: 2.0	+ Shutoff solenoid
Shutoff solenoid	. 2/	+ Volt : 24
Volt Spread	: 24	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes	: 3.5	T SOFFEI FOMF FRESSORE CHARACTERISTIC
Check tolerance	, , ,	Rated speed rpm : 1350
cm3/1000s.	: 5.0	+ Aneroid pressure
		+ hPa : 1000
		+ Supply pomp
		+ pressure bar : 8.0 + Tolerance bar +-: 0.3
FULL-LOAD SPEED R	FGULATION	Shutoff solenoid
TOLL LOAD OF LED IN	LUCEATION	+ Volt : 24
Rated speed rpm	: 1525	+
Pressure hPa	: 1000	+ Rated speed rpm : 600
Del. quantity	77.0	+ Aneroid pressure
cm3/1000 strokes	: 33.0	+ hPa : 1000
Tolerance cm3/1000 str. +-	. 3.0	+ Supply pomp + pressure bar : 4.0
Shutoff solenoid	. 5.0	Tolerance bar +: 0.3
Volt	: 24	+ Shutoff solenoid
		+ Volt : 24
STARTING FUEL DEL	IVERY	+
<b>D</b> • 1 • • •	400	+ OVERFLOW QUANTITY
Rated speed rpm Del. quantity	: 100	+ Rated speed rpm : 1350
cm3/1000 strokes	: 95.0	Aneroid pressure
Tolerance	. /5.0	+ hPa : 1000
cm3/1000 str. +	: 30.0	+ Overflow quantity
Shutoff solenoid		+ ccm/10s : 97.2
Volt	: 24	+ Tolerance
		+ ccm/10s +-: 41.6
		Check tolerance
		+ ccm/10s +-: 41.6
	<del></del>	+ Shutoff solenoid
INJECTION-PUMP TES	ST SPECIFICATIONS	+ Volt : 24
		Dated annual annual (00)
TIMING DEVICE CHAP	RACTERISTIC	+ Rated speed rpm : 600 + Aneroid pressure
Rated speed rpm	: 1100	hPa : 1000
Aneroid pressure		Overflow quantity
hPa	: 1000	+ ccm/10s : 63.8
		+ Tolerance
SV travel mm	: 2.6	+ ccm/10s +-: 22.2
Tolerance mm +- Check	: 0.4	Check tolerance
tolerance mm +-	: 0.9	- ccm/10s +-: 22.2
Shutoff solenoid	. 0.,	+ Shutoff solenoid
Volt	: 24	+ Volt : 24
	4770	+
Rated speed rpm	: 1350	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Aneroid pressure hPa	: 1000	Rated speed rpm : 1525
iird	. 1000	T nated speed (bill . 1767
		1

Aneroid pressure hPa :	: 1000	‡	Shutoff solenoid Volt :	24
Del. quantity cm3/1000 strokes : Tolerance	: 33.0	+	Rated speed rpm : Aneroid pressure	1200
cm3/1000 str. +- : Check tolerance	3.0	Ŧ	hPa :	1000
cm3/1000s. +-: Shutoff solenoid	: 6.0	Ŧ	Del. quantity cm3/1000 strokes :	74.0
Volt :	: 24	Ī	Tolerance cm3/1000 str. +-: Check tolerance	2.0
Rated speed rpm : Aneroid pressure	: 1475	1	cm3/1000s. + : Shutoff solenoid	3.5
hPa :	: 1000	$\frac{1}{2}$	Volt :	24
cm3/1000 strokes : Tolerance	: 50.0	$\frac{1}{2}$	Rated speed rpm : Aneroid pressure	600
cm3/1000 str. +-: Check tolerance	: 8.0	Ī	hPa : Del. quantity	1000
cm3/1000s. +-: Shutoff solenoid	: 10.0	$\frac{1}{2}$	cm3/1000 strokes : Tolerance	84.5
Volt :	24	Ī	cm3/1000 str. + :	2.0
Rated speed rpm : Aneroid pressure	: 1610	1	cm3/1000s. +-: Shutoff solenoid	3.5
hPa :	1000	+	Volt :	24
cm3/1000 strokes : Tolerance	: 1.5	+	Rated speed rpm : Amercia pressure	700
cm3/1000 str. +-: Check tolerance	1.5	1	hPa : Del. quantity	1000
cm3/1000s. +-: Shutoff solenoid	: 1.5	1	cm3/1000 strokes : Tolerance	79.5
Volt :	: 24	+	cm3/1000 str. +-: Check tolerance	0.5
Rated speed rpm : Aneroid pressure	: 600	1	cm3/1000s. +-: Shutoff solenoid	3.5
hPa :	375	<u> </u>	Volt :	24
LDA/ HBA stroke mm :	: 7.5	‡		
Del. quantity cm3/1000 strokes :	: 64.5	‡	ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP
Tolerance cm3/1000 str. +-:	. 0.5	‡	Rated speed rpm :	350
Check tolerance cm3/1000s. +-:	: 4.0	‡	Del. quantity cm3/1000 strokes :	1.5
Shutoff solenoid Volt :	: 24	‡	Tolerance cm3/1000 str. +-:	1.5
	: 1350	‡	Check tolerance cm3/1000s. +-:	1.5
Aneroid pressure hPa :	: 1000	†	Spread cm3/1000 strokes :	5.0
Del. quantity cm3/1000 strokes :	71.0	‡	FULL-LOAD STOP CONTR	ROL LEVER
Tolerance cm3/1000 str. +- : Check tolerance	: 1.5	<del>†</del>	Rated speed rpm :	350
cm3/1000s. +-:	3.5	Ī	Del. quantity cm3/1000 strokes :	1.5

Tolerance cm3/1000 str. +-: 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 1.5 Spread cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 475 Del. quantity 1.5 cm3/1000 strokes : Tolerance cm3/1000 str.  $\leftarrow$ : 1.5 Check tolerance 1.5 cm3/10003. Shutoff solenoid Volt 24 START TRANSITION Raced speed rpm : 250 Del. quantity cm3/1000 strokes : 55.0 Tolerance cm3/1000 str. +-:10.0 Shutoff solenoid Volt 24 Rated speed rpm : 130 Del. quantity cm3/1000 strokes : 95.C Tolerance cm3/1000 str. + :30.0 Shutoff solenoid 24 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 7.5 Dimension KF mm : 5,4 Tolerance mm +-:+-0.2MS1 dimension mm : 1,46 Tolerance mm +-:+0,15/-0,1KSB travel mm : 10,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 42,0..50,0

Note remarks	EST SPECIFICATIONS
Refer to Service adjustment instru See microcard(s)	ctions.
Edition Test oil	: 05.04.95 : ISO 4113
Part no. Pump designation	: 0 460 424 076 : VE4/12F1350R407-1
Customer-spec. in Customer Motor Power KW	formation : IVECO-FIAT : 8040.45.4000 TCA : 102.0
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C +-	: 45 : 1
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 027
Opening pressure bar Tolerance bar +-	: 250 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450
REMARKS	

TIMING DEVICE TRAN	/EL
Rated speed rpm Aneroid pressure	: 1000
hPa	: 1000
Setting mm Tolerance mm +	: 1.6 : 0.2
Shutoff solenoid Volt	: 24
SUPPLY PUMP PRESSU	JRE
Rated speed rpm	: 1000
Aneroid pressure hPa	: 1000
Supply pomp pressure bar	: 6.5 : 0.3
Tolerance bar +- Shutoff solenoid Volt	: 24
	WITH BOOST PRESSURE
Rated speed rpm	: 700
Aneroid pressure	: 1000
Del. quantity cm3/1000 strokes	: 72.5
Tolerance cm3/1000 str. +-	: 0.5
Spread cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.0
Shutoff solenoid Volt	: 24
FULL-LOAD DELIV. W	ITHOUT BOOST PRESSURE
Rated speed rpm	: 600
Del. quantity cm3/1000 strokes	: 43.0
Tolerance cm3/1000 str. +-	: 0.5
Shutoff solenoid Volt	: 24
Check tolerance cm3/1000s.	: 5.0
IDLE SETTING	
Rated speed rpm	: 350
Del. quantity cm3/1000 strokes Tolerance	: 15.0
cm3/1000 str. +- Shutoff solenoid	: 2.0
Volt	: 24

INJECTION PUMP SETTING VALUES

Spread cm3/1000 strokes : 3.5	t petad aread area . 1750
Check tolerance	+ Rated speed rpm : 1350 + Aneroid pressure
cm3/1000s. : 5.0	+ hPa : 1000 + Supply pomp
	+ pressure bar : 7.9
	Tolerance bar + : 0.3 Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 24
Rated speed rpm : 1525	Rated speed rpm : 600
Pressure hPa : 1000 Del. quantity	+ Aneroid pressure + hPa : 1000
cm3/1000 strokes : 26.0 Tolerance	+ Supply pomp + pressure bar : 4.8
cm3/1000 str. +-: 3.0	Tolerance bar +-: 0.3
Shutoff solenoid Volt : 24	+ Shutoff solenoid + Volt : 24
	+
STARTING FUEL DELIVERY	+ OVERFLOW QUANTITY
Rated speed rpm : 100 Del. quantity	+ Rated speed rpm : 1350 + Aneroid pressure
cm3/1000 strokes : 95.0	+ hPa : 1000
Tolerance cm3/1000 str. +-: 30.0	+ Overflow quantity + ccm/10s : 138.8
Shutoff solenoid Volt : 24	+ Tolerance
. 24	+ ccm/10s +-: 41.6
	+ Check tolerance + ccm/10s + : 41.6
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 24
TIMING DEVICE CHARACTERISTIC	+ Rated speed rpm : 600 + Aneroid pressure
	+ hPa : 1000
Rated speed rpm : 1100 Aneroid pressure	+ Overflow quantity + ccm/10s : 97.2
hPa : 1000	+ Tolerance
SV travel mm : 2.6	+ ccm/10s +-: 22.2
Tolerance mm +-: 0.4 Check	+ Check tolerance + ccm/10s +-: 22.2
tolerance mm +-: 0.9	- Snutoff solenoid
Shutoff solenoid Volt : 24	+ Volt : 24
Rated speed rpm : 1350	DELIVERY AND BREAKAWAY CHARACTERISTIC
Aneroid pressure	Rated speed rpm : 1525
hPa : 1000	+ Aneroid pressure + hPa : 1000
SV travel mm : 4.1	+ Del. quantity
Tolerance mm +-: 0.4 Check	- cm3/1000 strokes : 26.0 - Tolerance
tolerance mm +-: 0.9 Shutoff solenoid	- cm3/1000 str. +-: 3.0 - Check tolerance
Volt : 24	+ cm3/1000s. $+-$ : 6.0
SUPPLY PUMP PRESSURE CHARACTERISTIC	+ Shutoff solenoid + Volt : 24
<del>-</del>	•

Pated speed non		1450	†	Check tolerance		7 -	
Rated speed rpm	:	1450	†	cm3/1000s. +-	:	3.5	
Aneroid pressure		4000	†	Shutoff solenoid			
hPa	:	1000	<b>†</b>	Volt	:	24	
Del. quantity		F7 0	+				
cm3/1000 strokes	:	53.0	+	Rated speed rpm	:	600	
Tolerance			<b>1</b> -	Aneroid pressure			
cm3/1000 str. +-	:	8.0	+	hPa	:	1000	
Check tolerance			+	Del. quantity			
cm3/1000s. +-	:	10.0	+	cm3/1000 strokes	:	76.5	
Shutoff solenoid			+	Tolerance			
Volt	:	24	+	cm3/1000 str. +	:	2.0	
			+	Check tolerance			
Rated speed rpm	:	1600	+	cm3/1000s. +-	;	3.5	
Aneroid pressure			+	Shutoff solenoid			
hPa	:	1000	+	Volt	:	24	
Del. quantity			1			<del>-</del> ,	
cm3/1000 strokes	:	1.5	1	Rated speed rpm	:	700	
Tolerance			<u>†</u>	Aneroid pressure	•		
cm3/1000 str. +-	:	1.5	1	hPa	•	1000	
Check tolerance			1	Del. quantity	•	,000	
cm3/1000s. +-	•	1.5	1	cm3/1000 strokes		72.5	
Shutoff salenoid	-	1,0	_[_	Tolerance	•	16.5	
Volt	:	24	1	cm3/1000 str. +-		0.5	
1311	•	<b>C</b> -T	1	Check tolerance	•	0.5	
Rated speed rpm	:	600	$\mathbf{I}$	cm3/1000s. +-		3.5	
Aneroid pressure	•	000	T	Shutoff solenoid	•	3.5	
hPa	•	510	T	Volt		7./	
IIFa	•	טוכ		voct	•	2.4	
			Ť				
I NA /			,				
LDA/		4.0	+				
HBA stroke mm	:	6.9	++	EL FOTO OLIVITORE		<u></u>	<del></del>
HBA stroke mm Del. quantity	:		† † †	ELECTR. SHUTOFF		<del></del>	<del></del>
HBA stroke mm Del. quantity cm3/1000 strokes	:	6.9 62.5	† † †	ELECTR. SHUTOFF CONTROL LEVER, IDL	E STO	)P	·
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance		62.5	† † †	CONTROL LEVER, IDL			
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +-			† † † †	CONTROL LEVER, IDL Rated speed rpm	E STO	OP 350	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance	:	62.5 0.5	† † † † †	CONTROL LEVER, IDL Rated speed rpm Del. quantity	:	350	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	62.5	† † † † †	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes	:		
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	62.5 0.5 4.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	62.5 0.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	350	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	:	62.5 0.5 4.0 24	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	350 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm	:	62.5 0.5 4.0 24	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm Aneroid pressure	:	62.5 0.5 4.0 24 1350	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread	:	350 1.5 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	:	62.5 0.5 4.0 24	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	350 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000S. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	:	62.5 0.5 4.0 24 1350 1000	╅╫╇╬╇╇╇╇╇╇╇╇╇	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread	:	350 1.5 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	:	62.5 0.5 4.0 24 1350	++++;+++;+++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes	: : :	350 1.5 1.5 1.5 5.0	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000S. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	:	62.5 0.5 4.0 24 1350 1000	++++;+++;++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread	: : :	350 1.5 1.5 1.5 5.0	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1600 strokes	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON	: : : : !TROL	350 1.5 1.5 1.5 5.0 LEVER	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm	: : : : !TROL	350 1.5 1.5 1.5 5.0	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity	: : : : !TROL	350 1.5 1.5 1.5 5.0 LEVER 350	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm	: : : : !TROL	350 1.5 1.5 1.5 5.0 LEVER	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24	+++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Spread	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5	+++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24 1200	<del>++++;+++;++++++++++++++++++++</del>	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Check tolerance cm3/1000s. + Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tclerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24	+++;+++;+++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. +-	: : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24 1200 1000	+++;+++;-+++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. +- Spread Cm3/1000s. +- Spread	: : : : : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5 5.0 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24 1200	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. +-	: : : : : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000s. tolerance cm3/1000s. tolerance cm3/1000s. tolerance cm3/1000s. tolerance cm3/1000s. tolerance cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24 1200 1000 65.5	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. +- Spread cm3/1000s. +- Spread cm3/1000strokes	: : : : : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5 5.0 1.5	
HBA stroke mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000s. +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	62.5 0.5 4.0 24 1350 1000 65.0 1.5 3.5 24 1200 1000	+++++++++++++++++++++++++++++++++++++++	CONTROL LEVER, IDL  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Spread cm3/1000 strokes  FULL-LOAD STOP CON  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s. +- Spread Cm3/1000s. +- Spread	: : : : : : : : : : :	350 1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5 5.0 1.5	

Rated speed rpm : 475
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 str. +-: 1.5
Check tolerance
cm3/1000s. +-: 1.5
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 str. + : 10.0
Shutoff solencid
Volt : 24

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 95.0
Tolerance
cm3/1000 str. + : 30.0
Shutoff solenoid
Volt : 24

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 6.9
Dimension K mm : 3,6
Tolerance mm + : +-0,1
Dimension KF mm : 6,4
Tolerance mm + : +-0,2
MS1 dimension mm : 1,75
Tolerance mm + : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 39,0..47,0

	+
BOSCH INJ. PUMP TEST SPECIFICATIONS	+ Rated speed rpm : 1000
Nick consent o	+ Aneroid pressure
Note remarks	† hPa : 1000
Refer to Service Info for test and	Setting mm : 1.6
adjustment instructions.	+ Setting mm : 1.6 + Tolerance mm +-: 0.2
See microcard(s) W400/	+ Shutoff solenoid
W. C.	+ Volt : 24
Edition : 05.04.95	1
Test oil : ISO 4113	SUPPLY PUMP PRESSURE
Part no. : 0 460 424 075A	t Batad around nam : 1000
Pump designation : VE4/12F1350R407A	+ Rated speed rpm : 1000
rump designation : VE4/12/1330K40/A	+ Aneroid pressure + hPa : 1000
	hPa : 1000 Supply pomp
Customer-spec. information	T supply point
Customer : IVECO-FIAT	+ pressure bar : 6.3 + Tolerance bar + : 0.3
Motor : 8040.25x.4000	+ Shutoff solenoid
. 0040.23%.4000	Volt : 24
	T voci : 24
TEST BENCH REQUIREMENTS	FULL-LOAD DELIVERY WITH BOOST PRESSURE
Calibrating-oil	Rated speed rpm : 700
return	+ Aneroid pressure
temperature °C : 45	+ hPa : 1000
Tolerance °C + : 1	+ Del. quantity
Total and the second se	+ cm2/1000 strokes : 70.0
Overflow	+ Tolerance
restriction mm : 0.55	+ cm3/1000 str. +-: 0.5
. 0.55	Spread
	+ cm3/1000 strokes : 3.5
Inlet press. bar : 0.35	Check tolerance
Tolerance bar +: 0.05	+ cm3/1000s. : 5.0
Totel affect bar	+ Shutoff solenoid
	+ Volt : 24
Test nozzle holde	I
assembly : 1 688 901 027	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
assembly . 1 000 701 027	TOLL-LOAD DELIV. WITHOUT BOOST PRESSURE
Opening pressure	Rated speed rpm : 600
bar : 250	+ Del. quantity
Tolerance bar +-: 3	+ cm3/1000 strokes : 46.0
	† Tolerance
	+ cm3/1000 str. +-: G.5
Test lines : 1 680 750 073	+ Shutoff solenoid
	+ Volt : 24
Outside diameter : 6.00	+ Check tolerance
	+ cm3/1000s. : 5.0
x inside diameter : 2.00	1
x Length mm : 450	IDLE SETTING
	+
	+ Rated speed rpm : 350
REMARKS	+ Del. quantity
	+ cm3/1000 strokes : 15.0
	+ Tolerance
	+ cm3/1000 str. +-: 2.0
	+ Shutoff solenoid
INJECTION PUMP SETTING VALUES	+ Volt : 24
<u> </u>	- Spread
TIMING DEVICE TRAVEL	+ cm3/1000 strokes : 3.5
removed a service of the second	1

Charl Aslamana		•			
Check tolerance cm3/1000S.	•	5.0	<ul> <li>Aneroid pressure</li> <li>hPa</li> </ul>		1000
CM37 10003.	•	J.0 I	- Supply pomp	٠	1000
		1	- pressure bar	•	8.0
		1	Tolerance bar +-	:	0.3
		+	- Shutoff solenoid	-	- * *
FULL-LOAD SPEED R	EGULATIO	N <del> </del>	- Volt	:	24
			-		
Rated speed rpm	: 152		- Kated speed rpm	:	600
Pressure hPa	: 1	000 +	- Aneroid pressure		4000
Del. quantity cm3/1000 strokes	. 7	3.0	- hPa	:	1000
Tolerance	. 5	3.0	- Supply pomp - pressure bar		4.0
cm3/1000 str. +-	. •	3.0 I	- Tolerance bar +-	•	0.3
Shutoff solenoid	•	1	Shutoff solenoid	•	U.J
Volt	:	24	· Volt	:	24
		1		•	-,
STARTING FUEL DEL	IVERY	+	<ul> <li>OVERFLOW QUANTITY</li> </ul>		
		+	-		
Rated speed rpm	: 10	0 +	Rated speed rpm	:	1350
Del. quantity	_	+	Aneroid pressure		
cm3/1000 strokes	: 9	5.0	- hPa	:	1000
Tolerance	. 7	<b>.</b>	• Overflow quantity		07.0
cm3/1000 str. +- Shutoff solemoid	: 5	0.0	ccm/10s	:	97.2
Volt	•	24	- Tolerance - ccm/10s +-		41.6
VOLL	•	<u> </u>	CCIII/ (US	•	41.0
		1	Check tolerance		
		+	- ccm/10s +-	:	41.6
		1	Shutoff solenoid	-	
			- Volt	:	24
INJECTION-PUMP TE	ST SPECI	FICATIONS +	-	:	
		+	- - Rated speed rpm	:	24 600
INJECTION-PUMP TE		+	Rated speed rpm Aneroid pressure	:	600
TIMING DEVICE CHA	RACTERIS	тіс	Rated speed rpm Aneroid pressure hPa	:	
TIMING DEVICE CHA		тіс	<ul> <li>Rated speed rpm</li> <li>Aneroid pressure</li> <li>hPa</li> <li>Overflow quantity</li> </ul>	:	600 1000
TIMING DEVICE CHA Rated speed upm Aneroid pressure	RACTERIS	тіс 0	<ul> <li>Rated speed rpm</li> <li>Aneroid pressure</li> <li>hPa</li> <li>Overflow quantity</li> <li>ccm/10s</li> </ul>	:	600
TIMING DEVICE CHA	RACTERIS	тіс	Rated speed rpm Aneroid pressure hPa Coverflow quantity Com/10s Tolerance	:	600 1000 63.8
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa	RACTERIS : 110	TIC 0 000	Rated speed rpm Aneroid pressure hPa Coverflow quantity Com/10s Tolerance	:	600 1000
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa SV travel mm	RACTERIS : 110 : 1	TIC 0 000 2.6	Rated speed rpm Aneroid pressure hPa Vverflow quantity ccm/10s Tolerance ccm/10s	:	600 1000 63.8
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +	RACTERIS : 110 : 1	TIC 0 000	Rated speed rpm Aneroid pressure hPa Verflow quantity ccm/10s Tolerance ccm/10s Check tolerance	:	600 1000 63.8 22.2
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa SV travel mm	RACTERIS : 110 : 1	TIC 0 000 2.6	Rated speed rpm Aneroid pressure hPa Vverflow quantity ccm/10s Tolerance ccm/10s	:	600 1000 63.8
Rated speed upm Aneroid pressure hPa SV travel mm Tolerance mm +	RACTERIS : 110 : 1	TIC 0 000 2.6 0.4 0.9	Rated speed rpm Aneroid pressure hPa Vverflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +-	:	600 1000 63.8 22.2
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm +	RACTERIS : 110 : 1	TIC 0 000 2.6 0.4	Rated speed rpm Aneroid pressure hPa Verflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 1000 63.8 22.2 22.2 24
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	600 1000 63.8 22.2 22.2 24
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt Rated speed rpm	RACTERIS : 110 : 1	TIC 0 000 2.6 0.4 0.9	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt DELIVERY AND BREA	: : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure	RACTERIS : 110 : 1	TIC 0 000 2.6 0.4 0.9 24	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt DELIVERY AND BREA	: : : : :	600 1000 63.8 22.2 22.2 24
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt Rated speed rpm	RACTERIS : 110 : 1	TIC 0 000 2.6 0.4 0.9	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure	: : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa	: : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity	: : : : KAWA :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +-	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: : : : KAWA :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: : : : KAWA :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0
TIMING DEVICE CHA  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +-	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s Check tolerance ccm/10s Shutoff solenoid Volt DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: : : : KAWA :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Check tolerance mm +-	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt  DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1 0.4 0.9 24	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt  DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0 3.0 6.0
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid	RACTERIS : 110 : 11 : : : : : : : : : : : : : : : : :	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1 0.4 0.9 24	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt  DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	: : : : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0 3.0
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm +- Check tolerance mm +- Shutoff solenoid Volt  SUPPLY PUMP PRESS	RACTERIS : 110 : 11 : 135 : 135 : 11 : 1	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1 0.4 0.9 24 ACTERISTIC	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt  DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: : : : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0 3.0 6.0 24
Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt  Rated speed rpm Aneroid pressure hPa  SV travel mm Tolerance mm + Check tolerance mm + Shutoff solenoid Volt	RACTERIS : 110 : 11 : 135 : 135 : 11 : 1	TIC 0 000 2.6 0.4 0.9 24 0 000 4.1 0.4 0.9 24 ACTERISTIC	Rated speed rpm Aneroid pressure hPa Overflow quantity ccm/10s Tolerance ccm/10s +- Check tolerance ccm/10s +- Shutoff solenoid Volt  DELIVERY AND BREA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : : : :	600 1000 63.8 22.2 22.2 24 Y CHARACTERISTIC 1525 1000 33.0 3.0 6.0

Aneroid pressure hPa :	1000	+ Shutoff solenoid + Volt : 24
Del. quantity cm3/1000 strokes : Tolerance	50.0	Rated speed rpm : 600 Aneroid pressure
cm3/1000 str. +-: Check tolerance	4.0	hPa : 1000 Del. quantity
cm3/1000s. +-: Shutoff solenoid	10.0	cm3/1000 strokes : 75.5
Volt :	24	cm3/1000 str. +-: 2.0 Check tolerance
Rated speed rpm : Aneroid pressure	1610	- cm3/1000s. +-: 3.5 - Shutoff solenoid
hPa : Del. quantity	1000	→ Volt : 24
cm3/1000 strokes : Tolerance	1.5	+ Rated speed rpm : 700 + Aneroid pressure
cm3/1000 str. ← : Check tolerance	1.5	+ hPa : 1000 + Del. quantity
cm3/1000s. +-: Shutoff solenoid	1.5	cm3/1000 strokes : 70.0 Tolerance
Volt :	24 600	+ cm3/1000 str. +-: 0.5 + Check tolerance + cm3/1000s. +-: 3.5
Rated speed rpm : Ameroid pressure hPa :	375	+ cm3/1000s. +-: 3.5 - Shutoff soleroid - Volt : 24
LDA/	313	1 0000
HBA stroke mm : Del. quantity	6.0	ELECTR. SHUTOFF
cm3/1000 strokes : Tolerance	64.5	CONTROL LEVER, IDLE STOP
cm3/1000 str. +-: Check tolerance	0.5	+ Rated speed rpm : 350 + Del. quantity
cm3/1000s. +-: Shutoff solenoid	4.0	+ cm3/1000 strokes : 1.5 + Tolerance
Volt :	24	+ cm3/1000 str. +-: 1.5 + Check tolerance
Rated speed rpm : Aneroid pressure	1350	+ cm3/1000s. + : 1.5 + Spread
hFa : Del. quantity cm3/1000 strokes :	1000 62.0	cm3/1000 strckes : 5.0  FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-:	1.5	+ FOLL-LOAD STOP CONTROL LEVER
Check tolerance	1.00	+ Rated speed rom · 350
	3.5	+ Rated speed rpm : 350 + Del. quantity + cm3/1000 strokes : 1.5
cm3/1000s. +-: Shutoff solenoid Volt :	3.5 24	
<pre>cm3/1000s. + : Shutoff solenoid Volt : Rated speed rpm :</pre>		Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread cm3/1000 strokes : 5.0
cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa :	24	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5
<pre>cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :</pre>	24 1200	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :	24 1200 1000	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread
cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	24 1200 1000 65.0	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. +- : 1.5 Spread cm3/1000s. +- : 5.0

Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-:1.5

Shutoff solenoid

Volt 24

### START TRANSITION

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 str. +-:10.0

Shutoff solenoid

Volt 24

Rated speed rpm 130

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 str. + :30.0

Shutoff solenoid

Volt 24

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

6.0

HBA stroke mm : 3,6 Tolerance mm + : +01 Dimension KF mm : 6,4 Tolerance mm +-:+-0.2MS1 dimension mm : 1,75

Tolerance mm +-:+0,15/-0,1

### CONTROL LEVER POSITION

SET

Control lever

: 37,9..39,9 position YA mm

Control lever

position YB mm : 42,0..50,0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W4CO/...

Edition : 26.07.94 Test oil : ISO 4113

Part no. : 0 460 494 271 Pump designation : VE4/9F2200R412

Customer-spec. information

Customer : NISSAN-MISA
Motor : LD 20 II-E (PF)

Power KW : 46.0

### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C :
Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

### REMARKS

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm +- : +-0,02
Outlet : C

. 0

### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.5
Tolerance mm +-: 0.2
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1200 Supply pomp pressure bar : 5.4 Tolerance bar + : 0.3

Shutoff solenoid Volt :

KSB/AFB Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 2200
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

IDLE DELIVERY

F18

Rated speed rpm : 350	† Tolerance
Del. quantity	+ cm3/1000 str. +-: 1.0
cm3/1000 strokes : 9.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-: 2.0	+
Spread	+ KSB/AFB Volt : 12
cm3/1000 strokes : 2.5	POECOURE DIFFERENCE
Shutoff solenoid Volt : 12	PRESSURE DIFFERENCE
	+ Rated speed rpm : 900
KSB/AFB Volt : 12	+ Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -0.2 + Tolerance
HIGH IDEE SETTING	- cm3/1000 str. +-: 0.1
Rated speed rpm : 500	+ Shutoff solenoid
Del. quantity cm3/1000 strokes : 9.0	+ Volt : 12
Tolerance	KSB/AFB Volt : 12
cm3/1000 str. + : 2.0	-
Shutoff solenoid Volt : 12	+ TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	+ Rated speed rpm : 900
KSB/AFB Volt : 12	+ Del. quantity
THE LOSS COURSES COURSE TO SECURE	- cm3/1000 strckes : -0.8
FULL-LOAD SPEED REGULATION	+ Tolerance + cm3/1000 str. +-: 0.1
Rated speed rpm : 2600	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 15.0 Tolerance	+ KSB/AFB Volt : 12
cm3/1000 str. +-: 3.0	T NOB/APB VOLL : 12
(1113/ 1000 Str. + 3.0	<del>+</del>
Shutoff solenoid	<del>                                     </del>
	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC
Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC
Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	+
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY	TIMING DEVICE CHARACTERISTIC Rated speed rpm : 1800
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +- : 0.4
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +- : 0.4 Check
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4  Tolerance mm +- : 0.4  Check tolerance mm +- : 0.7
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0 Tolerance	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +- : 0.4 Check
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 str. +- : 2.0	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4  Tolerance mm +- : 0.4  Check tolerance mm +- : 0.7  Shutoff solenoid
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1CO Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1CO Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1CO Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY SETTING	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 50.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1CO Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 900	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1C0 Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 900 Del. quantity	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  KSB/AFB Volt : 12
Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 1CO Del. quantity cm3/1000 strokes : 50.0  Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY SETTING  DELIVERY DIFFERENCE  Rated speed rpm : 900	TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.4 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 900  SV travel mm : 1.9 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12

SV travel mm :	8.1	1	Check tolerance			
Tolerance mm +-:	0.4	1	ccm/10s +-		22.2	
Check	0.4	I	Shutoff solenoid	•	26.2	
	0.5	T			13	
tolerance mm +-:	0.5	<b>T</b>	Volt	:	12	
Shutoff solenoid	40	†			4.0	
Volt :	12	+	KSB/AFB Volt	:	12	
		+				
KSB/AFB Volt :	12	+	DELIVERY AND BREA	KAWA	Y CHARACTER	ISTIC
		+				
SUPPLY PUMP PRESSUR	E CHARACTERISTIC	+	Rated speed rpm	:	2600	
		+	Del. quantity			
Rated speed rpm :	1800	+	cm3/1000 strokes	:	15.0	
Supply pomp		1	Tolerance			
pressure bar :	7.1	1	cm3/1000 str. +-	:	3.0	
Tolerance bar +-:		1	Check tolerance			
Shutoff solenoid		1	cm3/1000s. +-	•	4.5	
Volt :	12	1	Shutoff solenoid	•	***	
	• • • • • • • • • • • • • • • • • • • •		Velt		12	
KSB/AFB Volt :	12	1	VCCC	•	16	
RSB/AIB VOLL .	12	T	KSB/AFB Volt	:	12	
Dated speed spe	000	T	KSB/AFB VOLL	•	12	
Rated speed rpm :	900	Ť	Datad annual annu		2750	
Supply pomp	, -	<b>†</b>	Rated speed rpm	:	2350	
pressure bar :	4.5	+	Del. quantity		70.0	
Tolerance bar + :	0.3	†	cm3/1000 strokes	:	30.0	
Shutoff solenoid		+	Tolerance			
Volt :	12	+	cm3/1000 str. +	:	4.0	
		+	Check tolerance			
KSB/AFB Volt :	12	+	cm3/1000s. +-	:	5.5	
		+	Shuboff solenoid			
Rated speed rpm :	2200 ,	+	Volt	:	12	
Supply pomp		+				
pressure bar :	8.2	+	KSB/AFB Volt	:	12	
Tolerance bar +-:	0.3	1				
Shutoff solenoid		1	Rated speed rpm	:	2950	
Volt :	12	1	Del. quantity	•	<del></del>	
		1	cm3/1000 strokes	•	2.5	
KSB/AFB Volt :	12	1	Tolerance	•	2.5	
KODIAIO VOLL		1	cm3/1000 str. +-		2.5	
OVERFLOW QUANTITY		1	Check tolerance	•	2.7	
OVERTEON GOANTIT		$\mathbf{I}$	cm3/1000s. +-		2.5	
Rated speed rpm :	2200	T	Shutoff solenoid	•	2.5	
	2200	T			12	
Overflow quantity	97.2	†	Volt	:	12	
ccm/10s :	97.2	†	KOD /AFD W-1+		40	
Tolerance	14.4	†	KSB/AFB Volt	:	12	
ccm/10s +:	41.6	†	5.1		000	
		†	Rated speed rpm	:	900	
Check_tolerance		+	Del. quantity			
ccm/10s +-:	41.6	+	cm3/1000 strokes	:	30.4	
Shutoff solenoid		+	Tolerance			
Volt :	12	+	cm3/1000 str. +-	:	1.5	
		+	Check tolerance			
KSB/AFB Volt :	12	+	cm3/1000s. +-	:	2.5	
		+	Shutoff solenoid			
Rated speed rpm :	600	+	Volt	:	12	
Overflow quantity		+				
ccm/10s :	63.8	1	KSB/AFB Volt	:	12	
Tolerance		1		•		
ccm/10s + :	22.2	1	Rated speed rpm	:	1200	
		1	Harry Abana (but	•		

Del. quantity	+	Shutoff solenoid
cm3/1000 strokes :	32.5	Volt : 12
Tolerance	t t	
cm3/1000 str. + :	1.5	KSB/AFB Volt : 12
Check tolerance	2.5	
cm3/1000S. +-: Shutoff solenoid	<del>2.3</del>	ELECTR. SHUTOFF
Volt :	12	CONTROL LEVER, IDLE STOP
	·-	WONTHOL SERRY 1922 STOP
KSB/AFB Volt :	12	Rated speed rpm : 350
	<del>.</del>	Del. quantity
Rated speed rpm :	1800	cm3/1000 strokes : 1.5
Del. quantity	72.4	Tolerance
cm3/1000 strokes : Tolerance	32.6	cm3/1000 str. +- : 1.5 Check tolerance
cm3/1000 str. +-:	1.0	cm3/1000s. +-: 1.5
Check tolerance	1.0	Spread
cm3/1000s. +-:	2.5	cm3/1000 strokes : 5.0
Shutoff solenoid	<del>}</del>	
Volt :	12	KSB/AFB Volt : 12
Samuel and the same of the sam	†	
KSB/AFB Volt :	12	FULL-LOAD STOP CONTROL LEVER
Rated speed rpm :	600	Rated speed rpm : 350
Del. quantity	I	Del. quantity
cm3/1000 strokes :	31.1 ↓	cm3/1000 strokes : 1.5
Tolerance	+	Tolerance
cm3/1000 str. +:	1.5	cm3/1000 str. +-: 1.5
Check tolerance	+	Spread
cm3/1000s. +-:	2.5	cm3/1000 strokes : 5.0
Shutoff solenoid	12	Check tolerance
Volt :	12	cm3/1000S. +-: 1.5 Spread
KSB/AFB volt :	12	cm3/1000 strokes : 5.0
	<u> </u>	
Rated speed rpm :	2200	KSB/AFB Volt : 12
Del. quantity	t	
cm3/1000 strokes :	33.0	
Tolerance	0.5	
cm3/1000 str. +-: Check tolerance	1.5	
cm3/1000s. +-:	1.3	
Shutoff solenoid	+	CHECKING LOAD-DEPENDENT
Volt :	12	START OF DELIVERY
	+	
MS - MANTO AL CIUTO S S	+	DELIVERY DIFFERENCE
MECHANICAL SHUTOFF	†	Rated speed rpm : 900
Rated speed rpm :	2200	Rated speed rpm : 900 Del. quantity
Del. quantity		cm3/1000 strokes : -10.6
្រា3/1000 strokes :	1.5	Tolerance
Tolerance	+	cm3/1000 str. +-: 2.0
cm3/1000 str. +-:	1.5	Check tolerance
Spread	· · · · · · · · · · · · · · · · · · ·	cm3/1000s. +- : 2.0
cm3/1000 strokes :	5.0	Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +-:	1.5	νοιε : 12
Spread	I	KSB/AFB Volt : 12
cm3/1000 strokes :	5.0	The state of the s
	<del>}</del>	TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Del. quantity	:	900	
cm3/1000 strokes Tolerance	:	-0.8	
cm3/1000 str. +	:	0.1	
Check tolerance cm3/1000s. +-	:	0.1	
Shutoff solenoid Volt	•	12	
	•		
KSB/AFB Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	900	
cm3/1000 strokes	:	5.0	
Tolerance cm3/1000 str. +-	:	3.0	
Check tolerance cm3/1000s. +-	:	3.0	
Shutoff solenoid Volt	:	12	
KSB/AFB Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	900	
SV travel mm Tolerance mm +-	:	-0.8 0.5	
Check	•		
tolerance mm +- Shutoff solenoid	•	0.5	
Volt	:	12	
KSB/AFB Volt	:	12	
START TRANSITION			
		740	
Rated speed rpm Del. quantity	:	340	
cm3/1000 strokes Tolerance	:	35.0	
cm3/1000 str. +- Shutoff solenoid	:	10.0	
Volt	:	12	
KSB/AFB Volt	:	12	
Rated speed rpm Del. quantity	:	210	
cm3/1000 strokes Tolerance	:	55.0	
cm3/1000 str. +-	:	10.0	

Shutoff solenoi Volt	d :	12	
KSB/AFB Volt	:	12	
ASSEMBLY AND AD	JUSTMEN	T DIMENS	ONS
Dimension K mm Tolerance mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm KSB travel mm TLA travel mm	+ : + · · · · · · · · · · · · · · · · ·	-0,1 -0,2 -2 -0,2 -0,2 -0	
CONTROL LEVER P SET	OSITION	1	
Control lever position YA mm	: 30	),834,8	

Note remarks

Refer to Service Info for test and adjustment instructions.
See Microcard(s) W400/...

Edition : 25.04.94 Test eil : ISO 4113

Part no. : 0 460 494 299 Pump designation : VE4/9F2350R452

Customer-spec. information
Customer : RENAULT
Motor : J8S - 784

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm : 2.8
Tolerance mm + : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Supply pomp

pressure bar : 4.5 Tolerance bar +-: 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 36.7

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

IDLE DELIVERY

Rated speed rpm : 425

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 str. + : 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HIGH IDLE SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500

Del. quantity

cm3/1000 strokes : 23.0

Tolerance	+ Check
cm3/1000 str. +-: 3.0 Shutoff solenoid	<pre>+ tolerance mm +-: 0.7 + Shutoff solenoid</pre>
Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 800
Rated speed rpm : 100	SV travel mm : 1.1
Del. quantity cm3/1000 strokes : 72.0	+ Tolerance mm +-: 0.4 + Check
Tolerance cm3/1000 str. +-: 20.0	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
vott : 12	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 2000 Supply pomp
SETTING	- pressure bar : 6.8
ACLINEDY ATTERCANCE	+ Tolerance bar +-: 0.3
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1125	. 12
Del. quantity cm3/1000 strokes : -11.0	Rated speed rpm : 800 Supply pomp
Tolerance	+ pressure bar : 3.4
cm3/1000 str. +-: 1.0	+ Tolerance bar + : 0.3
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1125	Rated speed rpm : 2250
Del. quantity cm3/1000 strckes : -0.2	+ Overflow quantity + ccm/10s : 97.2
Tolerance cm3/1000 str. +-: 0.1	+ Tolerance + ccm/10s +-: 41.6
Shutoff solenoid	+
Volt : 12	+ Check tolerance + ccm/10s +-: 41.6
TIMING-DEVICE TRAVEL DIFFERENCE	+ Shutoff solenoid
Rated speed rpm : 1125	+ Volt : 12
Del. quantity cm3/1000 strokes : -0.6	Rated speed rpm : 800 Overflow quantity
Tolerance	+ ccm/10s : 63.8
cm3/1000 str. +-: 0.1 Shutoff solenoid	+ Tolerance + ccm/10s +-: 22.2
Volt : 12	† Charlets Language
	+ Check tolerance + ccm/10s + : 22.2
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
TIMING DEVICE CHARACTERISTIC	+ Volt : 12
Rated speed rpm : 2000	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm : 7.5	+ Rated speed rpm : 2500 + Del. quantity
Tolerance mm +-: 0.4	+ cm3/1000 strokes : 23.0
	+

Tolerance		+ Check tolerance
cm3/1000 str. +-: Check tolerance	3.0	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
cm3/1000s. +-: Shutoff solenoid	4.0	Volt : 12
Volt :	12	
Rated speed rpm : Del. quantity	2650	ELECTR. SHUTOFF
cm3/1000 strokes : Check tolerance	6.5	CONTROL LEVER, IDLE STOP
cm3/1000s. + : Shutoff solenoid	5.0	Rated speed rpm : 425  Del. quantity
Volt :	12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm :	2750	+ cm3/1000 str. + : 1.5 Check tolerance
Del. quantity cm3/1000 strokes :	2.5	+ cm3/1000s. +-: 1.5
Tolerance cm3/1000 str. +-:	2.5	‡
Check tolerance cm3/1000s. +-:	2.5	<del>+</del>
Shutoff solenoid Volt :	12	CHECKTAIC LOAD DEDENDENT
Rated speed rpm : Del. quantity	2250	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
cm3/1000 strokes : Tolerance	36.2	DELIVERY DIFFERENCE
cm3/1000 str. +-: Check tolerance	1.0	Rated speed rpm : 1125  Del. quantity
cm3/1000s. +-: Shutoff solenoid	2.3	cm3/1000 strokes : -13.0  Tolerance
Volt :	12	+ cm3/1000 str. + : 2.0 + Check tolerance
Rated speed rpm : Del. quantity	1750	cm3/1000s. +-: 2.0  Shutoff solenoid
cm3/1000 strokes : Tolerance	35.9	+ Volt : 12
cm3/1000 str. +-: Check tolerance	1.0	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000s. +-: Shutoff solenoid	2.3	Rated speed rpm : 1125  Del. quantity
Volt :	12	cm3/1000 strokes : -0.6 Tolerance
Rated speed rpm : Del. quantity	800	- cm3/1000 str. +: 0.1 - Check tolerance
cm3/1000 strokes : Tolerance	35.2	cm3/1000s. +: 0.1 Shutoff solenoid
cm3/1000 str. +-: Check tolerance	1.5	Volt : 12
cm3/1000s. +-: Shutoff solenoid	2.3	DELIVERY DIFFERENCE
Volt :	12	Rated speed rpm : 1125  Del. quantity
Rated speed rpm : Del. quantity	1125	cm3/1000 strokes : 5.0  Tolerance
cm3/1000 strokes : Tolerance	36.7	cm3/1000 str. +-: 3.0 Check tolerance
cm3/1000 str. +-:	0.5	+ cm3/1000s. +: 3.0

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1125 Tolerance mm 0.2

Check

0.3 tolerance mm

Shutoff solenoid

12 Volt

EXHAUST-GAS RECIRCULATION

Rated speed rpm 1000

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 str. + :0.5

Check tolerance

cm3/1000s. 2.5

Shutoff solenoid

Valt 12

START TRANSITION

Rated speed rpm 310

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. + :10.0

Shutoff solenoid

12 Volt

Rated speed rpm 210

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 str. +-:20.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm

Tolerance mm +:+0.1

Dimension KF mm : 5,5

Tolerance mm +-: +-0,2

Dimension MS mm : 1,5

Tolerance mm +-: +-0,2

POTENTIOMETER

SET

2. measurement

voltage Volt : ARF 12,0 **MICROSWITCH** 

SET

: 0,8..3,0 mm

: 11,6..12,4

CONTROL LEVER POSITION

SET

Control lever

: 37,8..41,8 position YA mm

Control lever

: 41,9..52,1 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.04.94 Edition : ISO 4113 Test oil

: 0 460 494 300 Part no. Pump designation : VE4/9F2350R452-1

Customer-spec. information Customer : RENAULT : J8S - 784 CA Motor

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm : 2.8 Tolerance mm +: 0.2 2.8

Shutoff solenoid

Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Supply pomp

pressure bar Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm :

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

12 Volt

IDLE DELIVERY

Rated speed rpm : 425

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 str. + : 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt 12

HIGH IDLE SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500

Del. quantity

cm3/1000 strokes : 23.0

Tolerance +	Check
cm3/1000 str. + : 3.0	tolerance mm +-: 0.7
Shutoff solenoid	Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 800
Rated speed rpm : 100	SV travel mm : 1.1
Del. quantity + cm3/1000 strokes : 72.0 +	Tolerance mm +-: 0.4 Check
Tolerance	tolerance mm + : 0.7
cm3/1000 str. + : 20.0 + Shutoff solenoid	Shutoff solenoid Volt : 12
Volt : 12 +	CURRY NUMBER DESCRIPTION OF STREET
1	SUPPLY PUMP PRESSURE CHARACTERISTIC
4	Rated speed rpm : 2000
LOAD-DEPENDENT START OF DELIVERY SETTING	Supply pomp
3E111NG	pressure bar : 6.8 Tolerance bar +- : 0.3
DELIVERY DIFFERENCE	Shutoff solenoid
DECIVER DIFFERENCE	Volt : 12
Rated speed rpm : 1125	
Del. quantity	Rated speed rpm : 800
cm3/1000 strokes : -11.0	Supply pomp
Tolerance	pressure bar : 3.4
cm3/1000 str. + : 1.0	Tolerance bar +: 0.3
Shutoff solenoid + 12 +	Shutoff solenoid Volt : 12
12	, VOCC ; 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1125	Rated speed rpm : 2250
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2
Rated speed rpm : 1125 Del. quantity	Rated speed rpm : 2250 Overflow quantity
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +- : 41.6
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. +-: 0.1	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6 Check tolerance
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6
Rated speed rpm : 1125  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. +- : 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +- : 41.6  Check tolerance ccm/10s +- : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. +- : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s +- : 41.6  Check tolerance ccm/10s +- : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. +- : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800 Overflow quantity ccm/10s : 63.8
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance  cm3/1000 str. +- : 0.1	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s  + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity ccm/10s : 63.8  Tolerance
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. +- : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s + : 22.2
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance
Rated speed rpm : 1125  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity cm3/1000 strokes : -0.6  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance  cm3/1000 str. + : 0.1  Shutoff solenoid	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid
Rated speed rpm : 1125  Del. quantity cm3/1000 strokes : -0.2  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity cm3/1000 strokes : -0.6  Tolerance cm3/1000 str. + : 0.1  Shutoff solenoid Volt : 12	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12
Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 2250 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800 Overflow quantity ccm/10s : 63.8 Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid
Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.2  Tolerance  cm3/1000 str. +- : 0.1  Shutoff solenoid  Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125  Del. quantity  cm3/1000 strokes : -0.6  Tolerance  cm3/1000 str. +- : 0.1  Shutoff solenoid  Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 2500
Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. + : 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 2250  Overflow quantity ccm/10s : 97.2  Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 800  Overflow quantity ccm/10s : 63.8  Tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  Shutoff solenoid Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC

Tolerance	1	Check tolerance
cm3/1000 str. + :	3.0	cm3/1000s. +-: 2.3
Check tolerance	1	Shutoff solenoid
cm3/1000s. #-:	4.0	Volt : 12
Shutoff solenoid	1	. 12
Volt :	12	
	12	·
Rated speed rpm :	2650	ELECTO CHUTOEF
	7	ELECTR. SHUTOFF
Del. quantity cm3/1000 strokes :	6.5	CONTROL LEVER, IDLE STOP
	7	Data dan and musical ADE
Check tolerance	5.0	Rated speed rpm : 425
cm3/1000s. +-:	5.0	Del. quantity
Shutoff solenoid	<b>1</b>	cm3/1000 strokes : 1.5
Volt :	12	Tolerance
	t	cm3/1000 str. + : 1.5
Rated speed rpm :	2750	Check tolerance
Del. quantity	<u> </u>	cm3/1000s. + : 1.5
cm3/1000 strokes :	2.5	•
Tolerance	+	
cm3/1000 str. +-:	2.5	
Check tolerance	+	
cm3/1000s. +-:	2.5	
Shutoff solenoid	<del>}</del>	
Volt :	12	
	1	CHECKING LOAD-DEPENDENT
Rated speed rpm :	2250	START OF DELIVERY
Del. quantity	1	
cm3/1000 strokes :	36.2 ↓	DELIVERY DIFFERENCE
Tolerance	1	DELIVERY DIFFERENCE
cm3/1000 str. +-:	1.0	Rated speed rpm : 1125
Check tolerance	7.0	Del. quantity
cm3/1000s. +-:	2.3	
Shutoff solenoid	2.3	cm3/1000 strokes : -13.0
	12	Tolerance
Volt :	12	cm3/1000 str. +-: 2.0
5 1 1	4750	Check tolerance
Rated speed rpm :	1750	cm3/1000s. +-: 2.0
Del. quantity		Shutoff solenoid
cm3/1000 strokes :	35.9	· Volt : 12
Tolerance	+	•
cm3/1000 str. +-:	1.0	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance	+	•
cm3/1000s. +-:	2.3	Rated speed rpm : 1125
Shutoff solenoid	+	Del. quantity
Volt :	12	cm3/1000 strokes : -0.6
	<del> </del>	Tolerance
Rated speed rpm :	800	cm3/1000 str. + : 0.1
Del. quantity	1	Check tolerance
cm3/1000 strokes :	75.0	cm3/1000s. +-: 0.1
Tolerance	33.4 <del>+</del>	· UND/ 10803.
	35.2	
	<del>}</del>	Shutoff solenoid
cm3/1000 str. +-:	1.5	
cm3/1000 str. +-: Check tolerance	1.5	Shutoff solenoid Volt : 12
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	<del>}</del>	Shutoff solenoid
cm3/1000 str. +-: Check tolerance cm3/1000S. +-: Shutoff solenoid	1.5	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	1.5	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125
cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :	1.5 2.3 12	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity
<pre>cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm :</pre>	1.5 2.3 12	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : 5.0
<pre>cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity</pre>	1.5 2.3 12 1125	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : 5.0 Tolerance
cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes :	1.5 2.3 12	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. +-: 3.0
cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	1.5 2.3 12 1125 36.7	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance
cm3/1000 str. +-: Check tolerance cm3/1000s. +-: Shutoff solenoid Volt :  Rated speed rpm : Del. quantity cm3/1000 strokes :	1.5 2.3 12 1125	Shutoff solenoid Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1125 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. +-: 3.0

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : Tolerance mm +: 0.2

Check

0.3 tolerance mm +-:

Shutoff solenoid

Volt 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm 1000

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 str. +-:0.5

Check tolerance

cm3/1000s.2.5

Shutoff solenoid

Volt 12

START TRANSITION

Rated speed rpm 310

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 str. + :10.0

Shutoff solenoid

Volt 12

210 Rated speed rpm

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 str. + :20.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm +-: +-0,1

Dimension KF mm : 5,5

Tolerance mm +-: +-0,2

: 1,5 Dimension MS mm

Tolerance mm +-: +-0,2

**POTENTIOMETER** 

SET

2. measurement

voltage Volt : ARF 12,0 MICROSWITCH

SET

: 0,8...3,0 mm

: 11,6..12,4

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,8..41,8

Control lever

position YB mm : 41,9..52,1

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.07.95 Pest oil : ISO 4113

Part no. : 0 460 494 381 Pump designation : VE4/9F2050R452-3

Customer—spec. information Customer : RENAULT Motor : J8S - 758 Power KW : 51.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm : 2.8
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1125
Supply pomp
pressure bar : 4.5
Tolerance bar +-: 0.3
Shutoff solenoid
Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125
Del. quantity
cm3/1000 strokes : 35.7
Tolerance
cm3/1000 str. +-: 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 4.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

### IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

### HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 10.5

Tolerance		1
cm3/1000 str. +-:	2.0	I
Shutoff solenoid		INJECTION-PUMP TEST SPECIFICATIONS
Volt :	12	+
ELILL JOAN SOEEN DECLI	ATTON	+ TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGUL	ALION	+ Rated speed rpm : 2000
Rated speed rpm :	2200	Hatter speed (pin : 2000
Del. quantity		+ SV travel mm : 7.5
cm3/1000 strokes :	20.0	+ Tolerance mm +-: 0.4
Tolerance cm3/1000 str. +-:	3.0	+ Check + tolerance mm ++: 0.7
Shutoff solenoid	5.0	Shutoff solenoid
Volt :	12	+ Volt : 12
OTANTINO BURL ARI TURN		+
STARTING FUEL DELIVER	Υ	+ Rated speed rpm : 800
Rated speed rpm :	100	SV travel ram : 1.1
Del. quantity	, 55	Tolerance mm + : 0.4
cm3/1000 strokes :	72.0	+ Check
Tolerance cm3/1000 str. +-:	20.0	tolerance mm +-: 0.7
Shutoff solenoid	20.0	+ Shutoff solenoid + Volt : 12
Volt :	12	. 12
		SUPPLY PUMP PRESSURE CHARACTERISTIC
		Pated aread was 2000
LOAD-DEPENDENT START	OF DELTVERY	+ Rated speed rpm : 2000 + Supply pomp
SETTING	OF DELIVERY	+ pressure bar . 6.8
		+ Tolerance bar + : 0.3
DELIVERY DIFFERENCE		+ Shutoff solenoid
Datad aread was	1125	+ Volt : 12
Rated speed rpm : Del. quantity	1125	Rated speed rpm : 800
cm3/1000 strokes :	-11.0	+ Supply pomp
Tolerance		+ pressure bar : 3.4
cm3/1000 str. +-:	1.0	+ Tolerance bar + : 0.3
Shutoff solenoid Volt :	12	+ Shutoff solenoid + Volt : 12
vott .	12	T vott : 12
PRESSURE DIFFERENCE		OVERFLOW QUANTITY
	4405	+
Rated speed rpm : Del. quantity	1125	+ Rated speed rpm : 2000 + Overflow quantity
cm3/1000 strokes :	-0.2	+ ccm/10s : 97.2
Tolerance		+ Tolerance
cm3/1000 str. +-:	0.1	+ ccm/10s + : 41.6
Shutoff solenoid Volt :	12	Check tolerance
vott .	12	+ ccm/10s +-: 41.6
TIMING-DEVICE TRAVEL	DIFFERENCE	+ Shutoff solenoid
	4407	+ Volt : 12
Rated speed rpm :	1125	Posted aread area a 200
Del. quantity cm3/1000 strokes :	-0.6	+ Rated speed rpm : 800 + Overflow quantity
Tolerance	0.0	ccm/10s : 62.5
cm3/1000 str. +-:	0.1	+ Tolerance
Shutoff solenoid	42	+ ccm/10s +: 22.2
Volt :	12	Ĭ

		l Tallamana
Check tolerance		+ Tolerance + cm3/1000 str. +-: 1.5
ccm/10s +-	: 22.2	+ Check tolerance
Shutoff solenoid		+ cm3/1000s. +-: 2.3
Volt	: 12	+ Shutoff solenoid
		† Volt : 12
DELIVERY AND BREAK	KAWAY CHARACTERISTIC	+
Data dana adama	. 2200	+ Rated speed rpm : 1125
Rated speed rpm	: 2200	+ Del. quantity
Del. quantity cm3/1000 strokes	: 20.0	+ cm3/1000 strokes : 35.7 + Tolerance
Tolerance	. 20.0	- cm3/1000 str. + : 0.5
cm3/1000 str. +	: 3.0	+ Check tolerance
Check tolerance		+  cm3/1000s. + : 2.3
cm3/1000s. +-		† Shutoff solenoid
Shutoff solenoid		† Volt : 12
Volt	: 12	†
Rated speed rpm	• 2750	<u> </u>
Del. quantity	. 2330	ELECTR. SHUTOFF
cm3/1000 strokes	: 6.5	+ CONTROL LEVER, IDLE STOP
Check tolerance		+
cm3/1000s. +-	: 5.0	+ Rated speed rpm : 400
Shutoff solenoid		+ Del. quantity
Volt	: 12	+ cm3/1000 strokes : 1.5
Datad apad ana	. 2/50	+ Tolerance
Rated speed rpm Del. quantity	: 2450	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 strokes	: 2.5	+ cm3/1000s: 1.5
Tolerance		+ Spread
cm3/1000 str. +-	: 2.5	- cm3/1000 strokes : 5.0
Check tolerance		+
cm3/1000s. +-		+ FULL-LOAD STOP CONTROL LEVER
Shutoff salenaid Volt	: 12	Dated aread area /00
VOCE	. 14	+ Rated speed rpm : 400 + Del. quantity
Rated speed rpm	: 2000	+ cm3/1000 strokes : 1.5
Del. quantity	. 2555	+ Tolerance
cm3/1000 strokes	: 34.8	+ cm3/1000 str. +-: 1.5
Tolerance		+ Spread
cm3/1000 str. +-	: 1.0	+ cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-	: 2.3	+ Check tolerance + cm3/1000s. +-: 1.5
Shutoff solenoid	. 2.3	+ Spread
Volt	: 12	+ cm3/1000 strokes : 5.0
		+
Rated speed rpm	: 1750	+
Del. quantity	7/ 0	†
cm3/1000 strokes	: 34.9	†
Tolerance cm3/1000 str. +-	: 1.0	İ
Check tolerance	. 1.0	CHECKING LOAD-DEPENDENT
cm3/1000s. +-	: 2.3	+ START OF DELIVERY
Shutoff solenoid		+
Volt	: 12	† DELIVERY DIFFERENCE
On the state of the	. 000	† Data to 1
Rated speed rpm	: 800	Rated speed rpm : 1125
Del. quantity cm3/1000 strokes	: 34.2	+ Del. quantity + cm3/1000 strokes : -13.0
511127 1000 3E1 0K63	. 57.6	+ 13.0
		,

Tolerance			
cm3/1000 str. +-		2.0	
Check tolerance cm3/1000s. +-	. •	2.0	
Shutoff solenoid	•	2.0	
Volt	:	12	
	•		
TIMING-DEVICE TRA	VEL	DIFFERENCE	
<b>5</b>		4405	
Rated speed rpm	:	1125	
Del. quantity cm3/1000 strokes		-0.6	
Tolerance	•	0.0	
cm3/1000 str. +	· :	0.1	
Check tolerance			
cm3/1000s. +	• :	0.1	
Shutoff solenoid		12	
Volt	•	17.	
DELIVERY DIFFEREN	ICE		
Rated speed rpm	:	1125	
Del. quantity cm3/1000 strokes		5.0	
Tolerance	•	5.0	
cm3/1000 str. +-	. :	3.0	
Check tolerance	•		
cm3/1000s. +-	· :	3.0	
Shutoff solenoid		40	
Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1125	
Tolerance mm +- Check	•	Ü.2	
tolerance mm +-	. •	0.3	
Shutoff solenoid	•		
Volt	:	12	
EXHAUST-GAS RECIR	CUL	ATION	
Rated speed rpm	:	1000	
Del. quantity	_	2/ 0	
cm3/1000 strokes Tolerance	:	24.0	
cm3/1000 str. +-	. :	0.5	
Check tolerance	•	•	
cm3/1000s. +-	:	2.5	
Shutoff solenoid		4.0	
Volt	:	12	
START TRANSITION			
Rated speed rpm	:	310	
Del. quantity		70.0	
cm3/1000 strokes Tolerance	:	35.0	
cm3/1000 str. +-	:	10.0	
	-		

Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 str. + : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS
Dimension K mm : 3,3
Tolerance mm + : +0,1

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,5
Tolerance mm + : +-0,2
Dimension MS mm : 1,2
Tolerance mm + : +-0,2

MICROSWITCH SET

: ARF 12,0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.07.95 Test oil : ISO 4113

Part no. : 0 460 484 085 Pump designation : VE4/8F2300R459-2

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 732
Power KW : 47.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return temperature °C

**temperature**  $^{\circ}C$  : 45 Tolerance  $^{\circ}C$  +- : 1

**Overflow** 

restriction mm : 0.55

Inlet press. bar : C.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.3
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 4.8
Tolerance bar +-: 0.3
Shutoff solenoid

Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

## HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 str. +- : 2.0
Shutoff soleroid
Volt : 12

### IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 str. + : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

### HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 9.0

Tolerance +	
cm3/1000 str. + : 2.0 + Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2450	
Del. quantity + cm3/1000 strokes : 28.5 + Tolerance	SV travel mm : 8.0 Tolerance mm +-: 0.4
cm3/1000 str. +: 3.0 + Shutoff solenoid +	Check tolerance mm +-: 0.7
Volt : 12	Shutoff solenoid Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 750
Ruted speed rpm : 100	SV travel mm : 2.1
Del. quantity + cm3/1000 strokes : 55.0 +	Tolerance mm + : 0.4 Check
Tolerance + 15.0 +	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid Volt : 12	Volt : 12
· 12	Rated speed rpm : 310
Ŧ	SV travel mm : 1.8
LOAD-DEPENDENT START OF DELIVERY + SETTING +	Tolerance mm +-: 1.2 Check
DELIVERY DIFFERENCE	tolerance mm ++: 1.2 Shutoff solenoid
Rated speed rpm : 1250 +	Volt : 12
Del. quantity cm3/1000 strokes : -8.7	KSB/AFB Volt : 12
Tolerance cm3/1000 str. +-: 1.0	Rated speed rpm : 500
Shutoff solenoid +	SV travel mm : 3.1
Volt : 12	Tolerance mm +-: 1.2 Check
PRESSURE DIFFERENCE	tolerance mm +-: 1.2 Shutoff solenoid
Rated speed rpm : 1250  Del. quantity	Volt : 12
cm3/1000 strokes : -0.2	KSB/AFB Volt : 12
cm3/1000 str. +: 0.1 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 2000 Supply pomp
TIMING-DEVICE TRAVEL DIFFERENCE	pressure bar : 6.8
Rated speed rpm : 1250	Tolerance bar + : 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : -0.4	Volt : 12
Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 750 Supply pomp
Shutoff solenoid + 12 +	pressure bar : 3.4 Tolerance bar +-: 0.3
+	

Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. +-: 1.0
vott . 12	Check tolerance
OVEDEL OU SUBSTITUTE	
OVERFLOW QUANTITY	+  cm3/1000s. + : 2.3
5	+ Shutoff solenoid
Rated speed rpm : 2250	† Volt : 12
Overflow quantity	+
ccm/10s : 97.2	+ Rated speed rpm : 1625
Tolerance	+ Del. quantity
ccm/10s +-: 41.6	+ cm3/1000 strokes : 31.6
	→ Tolerance
Check tolerance	+ cm3/1000 str. $+$ : 1.5
ccm/10s + : 41.6	+ Check tolerance
Shutoff solenoid	+  cm3/1000s. + : 2.3
Volt : 12	+ Shutoff solenoid
. ,2	+ Volt : 12
Rated speed rpm : 750	1
Gverflow quantity	Rated speed rpm : 2000
ccm/10s : 63.8	+ Rared speed rpm : 2000 + Del. quantity
Tolerance . 65.8	
	+ cm3/1000 strokes : 33.5
ccm/10s +-: 22.2	+ Tolerance
	+ cm3/1000 str. +-: 1.0
Check tolerance	+ Check tolerance
ccm/10s +: 22.2	+  cm3/1000s. + : 2.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
	+
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Rated speed rpm : 750
	+ Del. quantity
Rated speed rpm : 2450	+ cm3/1000 strokes : 31.7
Del. quantity	+ Tolerance
cm3/1000 strokes : 28.5	+ cm3/1000 str. + : 1.5
Tolerance	+ Check tolerance
cm3/1000 str. + : 3.0	+  cm3/1000s. + : 2.3
Check tolerance	+ Shutoff solenoid
cm3/1000s. +-: 4.0	→ Volt : 12
Shutoff solenoid	+
Volt : 12	Rated speed rpm : 1250
	+ Del. quantity
Rated speed rpm : 2650	+ cm3/1000 strokes : 32.1
Del. quantity	Tolerance
cm3/1000 strokes : 14.5	+ cm3/1000 str. +: 0.5
Check tolerance	+ Check tolerance
cm3/1000s. +-: 5.0	+ cm3/1000s. +-: 2.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	1
Rated speed rpm : 2950	1
Del. quantity	
cm3/1000 strokes : 2.5	ELECTR. SHUTOFF
Tolerance	CONTROL LEVER, IDLE STOP
cm3/1000 str. +-: 2.5	I CONTROL LEVER, IDLE STOP
Check tolerance	T Rated speed rpm : 410
cm3/1000s. +-: 2.5	+ Del. quantity
Shutoff solenoid	
	+ cm3/1000 strokes : 1.5 + Tolerance
Volt : 12	+ 10190200P
Detail aread area : 2250	+ cm3/1000 str. +-: 1.5
Rated speed rpm : 2250	- cm3/1000 str. +-: 1.5 - Check tolerance
Rated speed rpm : 2250 Del. quantity cm3/1000 strokes : 34.0	+ cm3/1000 str. +-: 1.5

Spread cm3/1000 strokes : 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1250
Rated speed rpm : 410	Tolerance mm +-: 0.2 Check
Del. quartity cm3/1000 strokes : 1.5	tolerance mm +-: 0.3 Shutoff solenoid
Tolerance cm3/1000 str. +-: 1.5	Volt : 12
Spread cm3/1000 strokes : 5.0 Check tolerance	START TRANSITION
cm3/1000s. +-: 1.5	Rated speed rpm : 310
cm3/1000 strokes : 5.0	Del. quantity cm3/1000 strokes : 30.0 Tolerance
$\frac{1}{2}$	cm3/1000 str. +-: 15.0 Shutoff solenoid
	Volt : 12
CHECKING LOAD-DEPENDENT	Rated speed rpm : 210
START OF DELIVERY	Del. quantity cm3/1000 strokes : 55.0
DELIVERY DIFFERENCE	Tolerance cm3/1000 str. +- : 15.0
Rated speed rpm : 1250 + Del. quantity +	Shutoff solenoid Volt : 12
cm3/1000 strokes : -11.0 + Tolerance +	
cm3/1000 str. +-: 2.0 +	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cn3/1000s. $\leftarrow$ : 2.0 $\leftarrow$ Shutoff solenoid	Dimension K mm : 3,3 Tolerance mm +- : +-1
Volt : 12	Dimension KF mm : 5,4 Tolerance mm +- : +-0,2
TIMING-DEVICE TRAVEL DIFFERENCE	Dimension MS mm : 1,3 Tolerance mm +- : +-0,2
Rated speed rpm : 1250 + Del. quantity +	
cm3/1000 strokes : -0.4 + Talerance +	MICROSWITCH SET
cm3/1000 str. + : 0.1 + Check tolerance	mm : 0,83,0
cm3/1000s. $\leftarrow$ : 0.1 + Shutoff solenoid +	: 9,810,6
Volt : 12	
DELIVERY DIFFERENCE	
Rated speed rpm : 1250 + Del. quantity +	End of test-specification sheet
cm3/1000 strokes : 5.0 + Tolerance + Toler	
cm3/1000 str. +-: 3.0 +- Check tolerance +	
cm3/1000s. +-: 3.0 +- Shutoff solenoid +	
Volt : 12 →	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 27.11.95

Test oil

: ISO 4113

Part no.

: 0 460 484 095

Pump designation: VE4/8F2300R463-1

Customer-spec. information

Customer

: FIAT-AUTO

Motor

: M708SA17/L014

Power KW

42.0

### TEST BENCH REQUIREMENTS

### Calibrating-oil

return

temperature °C 45

Tolerance \*C +:

1

### Overflow

restriction mm : 0.55

Inlet press. bar :

Tolerance bar + :

0.35

Test nozzle holde

assembly

: 1 688 901 022

Opening pressure

bar

130

Tolerance bar +-:

3

Test lines

: 1 680 750 073

Outside diameter :

6.00

x inside diameter:

2.00

x length mm

450

## REMARKS

### INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm

5.3

Tolerance mm

0.2

Shutorf solenoid

Volt

12

### SUPPLY PUMP PRESSURE

Rated speed rpm

1500

Supply pomp

pressure bar 5.6

Tolerance bar +-:

Shutoff solenoid

0.3

Volt

12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm :

1500

Del. quantity cm3/1000 strokes :

29.3

Tolerance

cm3/1000 str. +:

Spread

cm3/1000 strokes :

Shutoff solenoid Volt

12

0.5

2.5

IDLE SETTING

Rated speed rpm : 450

Del. quantity

12.0

cm3/1000 strokes :

Tolerance

cm3/1000 str. + :

2.0 Shutoff solenoid

Volt

Spread

cm3/1000 strokes : 2.5

Check tolerance cm3/1000s.

3.0

12

### FULL-LOAD SPEED REGULATION

Rated speed rpm

2500

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 str. +-:3.0

Shutoff solenoid

Volt

STARTING FUEL DELIVERY

Rated speed rpm

100

12

Del. quantity	- Check
cm3/1000 strokes : 50.0 -	tolerance mm +-: 0.9
Tolerance	- Shutoff solenoid
cm3/1000 str. +-: 13.0	- Volt : 12
Shutoff solenoid -	
Volt : 12 -	Rated speed rpm : 2000
. 12	L Rated speed i pill . 2000
	SV though mm
	SV travel mm : 7.6
LOAD REPUBLIC OTANT OF ACLITICAL	Tolerance mm +-: 0.4
LOAD-DEPENDENT START OF DELIVERY	Shutoff solenoid
SETTING	+ Volt : 12
-	<del> </del> -
DELIVERY DIFFERENCE	SUPPLY PUMP PRESSURE CHARACTERISTIC
7	+
Rated speed rpm : 1500 -	Rated speed rpm : 2300
Del. quantity	Supply pomp
cm3/1000 strokes : -8.0	pressure bar : 7.7
Tolerance	Tolerance bar +-: 0.3
cm3/1000 str. +-: 1.0	Shutoff solenoid
Shutoff solenoid	Volt : 12
Volt : 12	12
voct : 12	Data dama da musa da 200
Specialine presentation	Rated speed rpm : 600
PRESSURE DIFFERENCE	Supply pomp
	pressure bar : 3.4
Rated speed rpm : 1500	† Tolerance bar +-: 0.3
Del. quantity	Shutoff solenoid
cm3/1000 strokes : -0.2	├ Volt : 12
Tolerance	1
cm3/1000 str. +-: 0.1	OVERFLOW QUANTITY
Shutoff solenoid	
Volt : 12	Rated speed rpm : 2300
. 12	Overflow quantity
TIMING-DEVICE TRAVEL DIFFERENCE	ccm/10s : 97.2
TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance
Datad aread man 1500	
Rated speed rpm : 1500	f ccm/10s + : 41.6
Del. quantity	†
cm3/1000 strokes : -0.8	- Check tolerance
Tolerance	ccm/10s +-: 41.6
cm3/1000 str. +-: 0.1	- Shutoff solenoid
Shutoff solenoid -	- Volt : 12
Volt : 12	-
<del>,</del>	Rated speed rpm : 600
<del></del>	Overflow quantity
INJECTION—PUMP TEST SPECIFICATIONS	ccm/10s : 63.8
	Tolerance
TIMING DEVICE CHARACTERISTIC	ccm/10s + : 22.2
TIMENO DEVICE GIVENNO LENZO LE	
Rated speed rpm : 2300	Check tolerance
nated speed i piii . 2000	com/10s +-: 22.2
SV travel mm : 9.0	Shutoff solenoid
Tolerance mm +-: 0.4	- Volt : 12
Check	
tolerance mm + : 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid -	<b>†</b>
Volt : 12 -	- Rated speed rpm : 2500
4	P Del. quantity
Rated speed rpm : 800 -	cm3/1000 strokes : 20.0
4	Tolerance
SV travel mm : 2.0	cm3/1000 str. + : 3.0
Tolerance mm +-: 0.4	-

Check tolerance cm3/1000s. + :	: 5.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt	: 12	†
Rated speed rpm : Del. quantity	: 2700	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes :	5.0	+
Check tolerance cm3/1000s. +-:	5.0	+ Rated speed rpm : 450 + Del. quantity
Shutoff solenoid Volt	: 12	cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm :	: 2900	cm3/1000 str. +-: 1.5 Check tolerance
Del. quantity cm3/1000 strokes :	0.8	+ cm3/1000s. +-: 1.5 + Spread
Tolerance cm3/1000 str. + :	8.0	+ cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +-:	0.8	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt :	: 12	+ Rated speed rpm : 450 + Del. quantity
Rated speed rpm :	: 2300	+ cm3/1000 strokes : 1.5 + Tolerance
Del. quantity cm3/1000 strokes :	: 31.1	+ cm3/1000 str. +-: 1.5 + Spread
Tolerance cm3/1000 str. + :		cm3/1000 strokes : 5.0 check tolerance
Check tolerance cm3/1000s. +-:		+ cm3/1000s. $+-$ : 1.5
Shutoff solenoid		+ Spread + cm3/1000 strokes : 5.0
Volt :	: 12	IDLE DELIVERY
Rated speed rpm : Del. quantity	: 1000	+ Rated speed rpm : 650
cm3/1000 strokes : Tolerance	30.0	Del. quantity cm3/1000 strokes : 2.5
cm3/1000 str. +-: Check tolerance	1.2	+ Tolerance + cm3/1000 sur. +-: 2.5
cm3/1000s. +-:	2.3	+ Check tolerance
Shutoff solenoid Volt :	: 12	cm3/1000s. +-: 2.5 Shutoff solenoid
Rated speed rpm :	600	Volt : 12
Del. quantity cm3/1000 strokes :	30.0	+ Rated speed fpm : 550 + Del. quantity
Tolerance cm3/1000 str. +-:	1.5	+ cm3/1000 strokes : 5.0 + Tolerance
Check tolerance cm3/1000s. +-:	3.5	+ cm3/1000 str. +-: 3.0 + Check tolerance
Shutoff solenoid Volt :	12	+ cm3/1000s. +-: 5.5 + Shutoff solenoid
Rated speed rpm :		Volt : 12
Del. quantity cm3/1000 strokes :		+
Tolerance		Ţ
cm3/1000 str. +-: Check tolerance		CHECKING LOAD-DEPENDENT
cm3/1000s. +-:	2.3	+ START OF DELIVERY

### DELIVERY DIFFERENCE

Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.0

Tolerance

cm3/1000 str. +: 3.0

Check tolerance cm3/1000s. +

os. <del>+ :</del> 4.0

Shutoff solenoid

Volt : 12

### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500

Del. quentity

cm3/1000 strokes : -0.8

Tolerance

 $cm3/1000 str. \leftarrow : 0.1$ 

Check tolerance

cm3/1000s. +-: 0.1

Shutoff solenoid

Volt : 12

# START TRANSITION

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 str. + : 5.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 350

Del. quentity

cm3/1000 strokes : 50.0

Tolerance

cm3/1000 str. + : 8.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,5
Tolerance mm + : +-0,2
Dimension MS mm : 1,8

Tolerance mm +:+0.2

BOSCH INJ. PUMP TE	EST SPECIFICATIONS		
Note remarks			
Refer to Service : adjustment instru See microcard(s) !	ctions.		
Edition Test oil	: 07.02.96 : ISO 4113		
Part no. Pump designation	: 0 460 494 356 : VE4/9F2100R471-1		
Customer-spec. in: Customer Motor	formation : VW : 1,9 L UD f. T4		
Power KW	: 50.0		
TEST BENCH REQUIRE	EMENTS		
Calibrating-oil return			
temperature °C Tolerance °C +-	: 45 : 1		
Overflow restriction mm	: 0.55		
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05		
Test nozzle holde assembly	: 1 688 901 111		
Opening pressure bar Tolerance bar +-	: 147 : 3		
Test lines	: 1 680 750 073		
Outside diameter	: 6.00		
x inside diameter x length mm	: 2.00 : 450		
REMARKS			

Plunger stroke mm Tolerance mm +- Outlet				
INJECTION PUMP SETTING VALUES				
TIMING DEVICE TRAN	VEL			
Rated speed rpm	: 1250			
Setting mm Tolerance mm +- Shutoff solenoid Volt	: 3.9 : 0.2 : 12			
SUPPLY PUMP PRESSI	_			
Rated speed rpm	: 1250			
Supply pomp pressure bar Tolerance bar +-	: 5.6			
Shutoff solenoid Volt	: 12			
FULL-LOAD DELIV.	WITHOUT BOOST PRESSURE			
Rated speed rpm	: 1250			
Del. quantity cm3/1000 strokes Tolerance	: 40.0			
cm3/1000 str. +-	: 0.5			
cm3/1000 strokes Shutoff solenoid Volt	: 2.5			
	: 12			
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING				
Rated speed rpm Del. quantity	: 550			
cm3/1000 strokes Tolerance	: 5.5			
cm3/1000 str. +- Shutoff solenoid	: 0.5			
Volt	: 12			
IDLE DELIVERY				
Rated speed rpm Del. quantity	: 425			
cm3/1000 strokes Tolerance	: 6.5			
cm3/1000 str. +-	: 1.0			
cm3/1000 strokes	: 2.0			

BEGINNING OF DELIVERY

Start of delivery blocking

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 + Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -1.0 + Tolerance
Rated speed rpm : 500	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
Del. quantity	Volt : 12
cm3/1000 strokes : 6.5 Tolerance	Ţ
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 1700
Rated speed rpm : 2400	+ SV travel mm : 6.0 + Tolerance mm → : 0.4
Del. quantity cm3/1000 strokes : 15.0	+ Check
Tolerance cm3/1000 str. +-: 2.0	+ tolerance mm +-: 0.8 + Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
	Rated speed rpm : 750
STARTING FUEL DELIVERY	+ SV travel mm : 1.5
Rated speed rpm : 100 Del. quantity	Tolerance mm +-: 0.4 Check
cm3/1000 strokes : 65.0	tolerance mm + : 0.8
Tolerance cm3/1000 str. +-: 25.0	+ Shutoff solenoid + Volt : 12
Shutoff solenoid Volt : 12	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
	+ Supply pomp
LOAD-DEPENDENT START OF DELIVERY SETTING	+ pressure bar : 6.9 + Tolerance bar +-: 0.3
0E111/4G	Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
Rated speed rpm : 1250	Rated speed rpm : 750
Del. quantity cm3/1000 strokes : -7.0	+ Supply pomp + pressure bar : 4.1
Tolerance	+ Tolerance bar +-: 0.3
cm3/1000 str. +-: 1.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	+
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1250	+ Rated speed rpm : 1850 + Overflow quantity
Del. quantity	+ ccm/10s : 97.2
cm3/1000 strokes : -0.2 Tolerance	+ Tolerance + ccm/10s +-: 41.6
cm3/1000 str. +-: 0.1 Shutoff solenoid	+ Check tolerance
Volt : 12	ccm/10s +-: 55.5 Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE	Volt : 12
	1

Rated speed rpm : 750	+ Shutoff solenoid
Overflow quantity ccm/10s : 63.8	+ Volt : 12
Tolerance ccm/10s +-: 22.2	Rated speed rpm : 750
	+ Del. quantity + cm3/1000 strokes : 38.5
Check tolerance ccm/10s + : 34.7	+ Tolerance + cm3/1000 str. +-: 1.5
Shutoff solenoid Volt : 12	+ Check tolerance + cm3/1000s. +-: 3.0
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 2400	Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 15.0	+ Del. quantity + cm3/1000 strokes : 40.0
Tolerance cm3/1000 str. +-: 2.0	+ Tolerance + cm3/1000 str. +-: 0.5
Check tolerance cm3/1000s. +-: 4.0	+ Check tolerance + cm3/1000S. +-: 2.2
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
	+
Rated speed rpm : 2250 Del. quantity	
cm3/1000 strokes : 29.0 Tolerance	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
cm3/1000 str. +-: 5.0	+
Check tolerance cm3/1000s. +-: 6.0	Rated speed rpm : 425 Del. quantity
Shutoff solenoid Volt : 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 2650	+ cm3/1000 str. +-: 1.5 + Check tolerance
Del. quantity cm3/1000 strokes : 1.5	- cm3/1000s. +-: 1.5 - Spread
Tolerance cm3/1000 str. +-: 1.5	cm3/1000 strokes : 5.0
Check tolerance	FULL-LOAD STOP CONTROL LEVER
cm3/1000s. +-: 1.5 Shutoff solenoid	Rated speed rpm : 425
Volt : 12	Del. quantity - cm3/1000 strokes : 1.5
Rated speed rpm : 1850 Del. quantity	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000 strokes : 41.0 Tolerance	Spread + cm3/1000 strokes : 5.0
cm3/1000 str. +-: 1.0	+ Check tolerance
Check tolerance cm3/1000s. +-: 2.2	+ cm3/1000s. +-: 1.5 + Spread
Shutoff solenoid Volt : 12	+ cm3/1000 strokes : 5.0
Rated speed rpm : 450	<del>†</del>
Del. quantity cm3/1000 strokes : 39.0	RESIDUAL QUANTITY
Tolerance cm3/1000 str. +-: 3.0	Rated speed rpm : 515
Check tolerance cm3/1000s. +-: 5.5	+ Del. quantity + cm3/1000 strokes : 6.5
	•

Talamana		
Tolerance		+ Tolerance mm +-: 0.2
cm3/1000 str. +-:	1.0	+ Check
Check tolerance	1.0	
	2.5	
cm3/1000s. +:	2.5	+ Shutoff solenoid
Shutoff solenoid		† Volt : 12
: Yalt	12	+
		+ EXHAUST-GAS RECIRCULATION
		+
CHECKING LOAD-DEPEN	DENT	+ Rated speed rpm : 1000
START OF DELIVERY		+ Del. quantity
		+ cm3/1000 strokes : 22.0
DELIVERY DIFFERENCE		+ Tolerance
		+ cm3/1000 str. +-: 1.0
Rated speed rpm :	1250	+ Check tolerance
Del. quantity	1250	- cm3/1000s. +-: 3.0
cm3/1000 strokes :	~:0.0	Shutoff solenoid
	0.0	
Tolerance	7.0	† Volt : 12
cm3/1000 str. +-:	3.0	T 07107 70411077011
Check tolerance	/ 0	+ START TRANSITION
cm3/1000s. +:	4.0	†
Shutoff solenoid		+ Rated speed rpm : 380
Volt :	12	+ Del. quantity
		+ cm3/1000 strokes : 35.0
TIMING-DEVICE TRAVE	L DIFFERENCE	+ Tolerance
		+ cm3/1000 str. +-: 10.0
Rated speed rpm :	1250	+ Shutoff solenoid
Del. quantity		+ Volt : 12
cm3/1000 strokes :	-1.0	+
Tolerance		1
cm3/1000 str. +-:	0.1	+ Rated speed rpm : 180
Check tolerance	•	+ Del. quantity
cm3/1000s. +-:	0.1	- cm3/1000 strokes : 65.0
	0.1	+ Tolerance
Shirtoff solenoid		
Shutoff solenoid	12	
Shutoff solenoid Volt :	12	+ cm3/1000 str. + : 25.0
Volt :	12	cm3/1000 str. + : 25.0 Shutoff solenoid
	12	+ cm3/1000 str. + : 25.0
Volt : DELIVERY DIFFERENCE	·-	cm3/1000 str. + : 25.0 Shutoff solenoid
Volt : DELIVERY DIFFERENCE Rated speed rpm :	12 1250	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12
Volt : DELIVERY DIFFERENCE Rated speed rpm : Del. quantity	1250	cm3/1000 str. + : 25.0 Shutoff solenoid
Volt : DELIVERY DIFFERENCE Rated speed rpm : Del. quantity cm3/1000 strokes :	1250	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Volt : DELIVERY DIFFERENCE Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	1250 5.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-:	1250 5.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance	1250 5.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : + 0,1 Dimension KF mm : 5,3
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	1250 5.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	1250 5.0 3.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1 Dimension KF mm : 5,3 Tolerance mm +- : +0,2 Dimension MS mm : 1,3
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	1250 5.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	1250 5.0 3.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1 Dimension KF mm : 5,3 Tolerance mm +- : +0,2 Dimension MS mm : 1,3
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	1250 5.0 3.0 3.0	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE	1250 5.0 3.0 3.0 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +- : +-0,1 Dimension KF mm : 5,3 Tolerance mm +- : +0,2 Dimension MS mm : 1,3
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE	1250 5.0 3.0 3.0 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm :	1250 5.0 3.0 3.0 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE	1250 5.0 3.0 3.0 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +-: +-0,1 Dimension KF mm : 5,3 Tolerance mm +-: +0,2 Dimension MS mm : 1,3 Tolerance mm +-: +-0,2  MICROSWITCH SET
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp	1250 5.0 3.0 3.0 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +-: +-0,1 Dimension KF mm : 5,3 Tolerance mm +-: +0,2 Dimension MS mm : 1,3 Tolerance mm +-: +-0,2  MICROSWITCH SET  mm : 0,83,0
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar :	1250 5.0 3.0 3.0 12 1250 -0.9	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm +-: +-0,1 Dimension KF mm : 5,3 Tolerance mm +-: +0,2 Dimension MS mm : 1,3 Tolerance mm +-: +-0,2  MICROSWITCH SET
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar : Tolerance bar + : Shutoff solenoid	1250 5.0 3.0 3.0 12 1250 -0.9	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH SET  mm : 0,83,0 : ARF 12,0
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar : Tolerance bar + :	1250 5.0 3.0 3.0 12 1250 -0.9 0.2	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH SET  mm : 0,83,0 : ARF 12,0  CONTROL LEVER POSITION
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar : Tolerance bar + : Shutoff solenoid Volt :	1250 5.0 3.0 3.0 12 1250 -0.9 0.2 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH SET  mm : 0,83,0 : ARF 12,0
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar : Tolerance bar + : Shutoff solenoid	1250 5.0 3.0 3.0 12 1250 -0.9 0.2 12	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH SET  mm : 0,83,0 : ARF 12,0  CONTROL LEVER POSITION
Volt :  DELIVERY DIFFERENCE  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  PRESSURE DIFFERENCE  Rated speed rpm : Supply pomp pressure bar : Tolerance bar + : Shutoff solenoid Volt :	1250 5.0 3.0 3.0 12 1250 -0.9 0.2 12 DIFFERENCE	cm3/1000 str. + : 25.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,3 Tolerance mm + : +-0,2 Dimension MS mm : 1,3 Tolerance mm + : +-0,2  MICROSWITCH SET  mm : 0,83,0 : ARF 12,0  CONTROL LEVER POSITION

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Control lever position YA mm : 20,0..22,0

Control lever position YB mm : 61,5..72,5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.03.96 : 150 4113 Test oil

Part no. : 0 460 494 391 Pump designation : VE4/9F2100R471-2

Customer-spec. information Customer : VW Motor : 1.9L UD Power KW 50.0

### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

bar Tolerance bar + :

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450 :

# REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 3.9 Tolerance mm 0.2 Shutoff solenoid Volt 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp pressure bar 5.6 Tolerance bar +-: 0.3 Shutoff solenoid Jolt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 40.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid Volt 12

# HOUSING-FIXED IDLE SPRING RESIDUAL GUANTITY SETTING

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 5.5 Tolerance cm3/1000 str. +-: 0.5 Shutoff solenoid Volt 12

### IDLE DELIVERY

Rated speed rpm : 425 Del. quantity cm3/1000 strokes : 6.5 Tolerance cm3/1000 str. +-: 1.0 Spread cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt

#### HIGH IDLE SETTING

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 6.5

Tolerance +	
cm3/1000 str. +: 1.0 + Shutoff solenoid +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 1700
Rated speed rpm : 2400	·
Del. quantity + cm3/1000 strokes : 15.0 +	SV travel mm : 6.0 Tolerance mm +-: 0.4
Tolerance	Check
cm3/1000 str. +: 2.0 + Shutoff solenoid +	tolerance mm +-: 0.8 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 750
Rated speed rpm : 100	SV travel mm : 1.5
Del. quantity	Tolerance mm +-: 0.4
cm3/1000 strokes : 65.0	Check tolerance mm +-: 0.8
cm3/1000 str. +: 25.0	Shutoff solenoid
Shutoff solenoid + 12 + 12	Volt : 12
1	SUPPLY PUMP PRESSURE CHARACTERISTIC
LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 1700 Supply pomp
SETTING	pressure bar : 6.9
DELIVERY DIFFERENCE +	Tolerance bar +-: 0.3 Shutoff solenoid
Rated speed rpm : 1250	Volt : 12
Del. quantity	Rated speed rpm : 750
cm3/1000 strokes : -7.0	Supply pomp pressure bar : 4.1
cm3/1000 str. +-: 1.0	Tolerance bar + : 0.3
Shutoff solenoid Volt : 12	Shutoff solenoid
Volt : 12 +	Volt : 12
PRESSURE DIFFERENCE	OVERFLOW QUANTITY
Rated speed rpm : 1250 +	Rated speed rpm : 1850 Overflow quantity
cm3/1000 strokes : -0.2 +	ccm/10s : 97.2
Tolerance + : 0.1 + :	Tolerance ccm/10s +-: 41.6
Shutoff solenoid + 12 + 12	Check tolerance
TIMING-DEVICE TRAVEL DIFFERENCE	ccm/10s +-: 55.5 Shutoff solenoid
+	Volt : 12
Rated speed rpm : 1250 + Del. quantity +	Rated speed rpm : 750
cm3/1000 strokes : -1.0	Overflow quantity
Tolerance + : 0.1 +	ccm/10s : 63.8 Tolerance
Shutoff solenoid +	ccm/10s +-: 22.2
Volt : 12	
Τ	

		+ Del. quantity
Check tolerance		- cm3/1000 strokes : 38.5
ccm/10s +-	: 34.7	+ Tolerance
Shutoff solenoid		+ cm3/1000 str. +-: 1.5
Volt	: 12	+ Check tolerance
API TUPOU AND BOTAL	ALIAN CUADABTERIO	+  cm3/1000s. + : 3.0
DELIVERY AND BREAK	AWAY CHARACTERISTIC	+ Shutoff solenoid + Voli : 12
Rated speed rpm	: 2400	† Volt : 12
Del. quantity	. 2400	Rated speed rpm : 1250
cm3/1000 strokes	: 15.0	+ Del. quantity
Tolerance		- cm3/1000 strokes : 40.0
cm3/1000 str. +-	: 2.0	+ Tolerance
Check tolerance cm3/1000s. +-	: 4.0	+ cm3/1600 str. +-: 0.5
Shutoff solenoid	• 4•0	+ Check tolerance + cm3/1000s. +-: 2.2
Volt	: 12	Shutoff solenoid
1017		+ Volt : 12
Rated speed rpm	: 2250	+
Del. quantity		†
cm3/1000 strokes	: 29.0	FI FOTO OUNTARE
Tolerance cm3/1000 str. +-	: 5.0	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
Check tolerance	• 5.0	T CONTROL LEVER, TOLE STOP
cm3/1000s. +-	: 6.0	Rated speed rpm : 425
Shutoff solenoid		† Del. quantity
Volt	: 12	+ cm3/1000 strokes : 1.5
Dakad award man	. 2/50	+ Tolerance
Rated speed rpm Del. quantity	: 2650	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 strokes	: 1.5	- cm3/1000s. +-: 1.5
Tolerance	• • • • • • • • • • • • • • • • • • • •	Spread
cm3/1000 str. +-	; 1.5	+ cm3/1000 strokes : 5.0
Check tolerance		+
cm3/1000s. +-	: 1.5	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt	: 12	† Rated speed rpm : 425
VOCC	• 12	+ Del. quantity
Rated speed rpm	: 1850	cm3/1000 strokes : 1.5
Del. quentity		† Tolerance
cm3/1000 strokes	: 41.0	+ cm3/1000 str. +-: 1.5
Tolerance	. 10	+ Spread
cm3/1000 str. +- Check tolerance	: 1.0	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. +-	: 2.2	- cm3/1000s. +-: 1.5
Shutoff solenoid		+ Spread
Volt	: 12	+ cm3/1000 strokes : 5.0
	450	†
Rated speed rpm	: 450	†
Del. quantity cm3/1000 strokes	: 39.0	I
Tolerance	. 27.0	T RESIDUAL QUANTITY
cm3/1000 str. +	: 3.0	+
Check tolerance		Rated speed rpm : 515
cm3/1000s. +-	: 5.5	+ Del. quantity
Shutoff solenoid	: 12	+ cm3/1000 strokes : 6.5
Volt	• 14	+ Tolerance + cm3/1000 str. +-: 1.0
Rated speed rpm	: 750	Check tolerance
Carrier of the first of the control	·	- cm3/1000s. +-: 2.5

Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
CHECKING LOAD DEDE	UNCAIT	EXHAUST-GAS RECIRCULATION
CHECKING LOAD-DEPER START OF DELIVERY	NDENT	Rated speed rpm : 1000
DELIVERY DIFFERENCE	<b>E</b>	+ Del. quantity + cm3/1000 strokes : 22.0 + Tolerance
Rated speed rpm : Del. quantity	: 1250	cm3/1000 str. + : 1.0
cm3/1000 strokes : Tolerance	: -10.0	cm3/1000s. +-: 3.0 Shutoff solenoid
cm3/1000 str. + : Check tolerance	3.0	+ Volt : 12
cm3/1000s. +-: Shutoff solenoid	: 4.0	START TRANSITION
Volt	: 12	Rated speed rpm : 380 Del. quantity
TIMING-DEVICE TRAVE		+ cm3/1000 strokes : 35.0 + Tolerance
Rated speed rpm : Del. quantity		+ cm3/1000 str. + : 10.0 + Shutoff solenoid
cm3/1000 strokes Tolerance		+ Volt : 12 +
cm3/1000 str. + :		Rated speed rpm : 180
cm3/1000s. + : Shutoff solenoid		+ Del. quantity + cm3/1000 strokes : 65.0
Volt	: 12 -	+ Tolerance + cm3/1000 str. +-: 25.0
DELIVERY DIFFERENCE		+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		ACCEMENT AND AD HUGTHENIT DESCRIPTION OF
cm3/1000 strokes : Tolerance		+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 str. + : Check tolerance cm3/1000s. + :	: 3.0 : 3.0	+ Dimension K mm : 3,3 + Tolerance mm : +-0,1
<pre>cm3/100US. +- : Shutoff solenoid Volt ::</pre>	: 12	+ Dimension KF mm : 5,3 + Tolerance mm +-: +-0,2 + Dimension MS mm : 1,3
PRESSURE DIFFERENCE		Tolerance mm +-: +-0,2
Rated speed rpm :	_	MICROSWITCH
Supply pomp		SET
Tolerance bar + :	: -0.9 : 0.2	: ARF 12,0
Shutoff solenoid Volt	: 12	CONTROL LEVER POSITION SET
TIMING-DEVICE TRAVE	EL DIFFERENCE	
Rated speed rpm : Tolerance mm +-:		Control lever position YA mm : 20,022,0
Check tolerance mm +:	0.6	Control lever
COLET GRIDE TRIP	. J.J	position YB mm : 61,572,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.94 Test oil : ISO 4113

Part no. : 0 460 494 309 Pump designation : VE4/9F2250R472

Customer-spec. information Customer : PSA

Motor : XUD 9 TE-Y CATA

### TEST BENCH REQUIREMENTS .

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm + : +0,2
Outlet : A

### INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Aneroid pressure

Aneroju pressure

hPa : 1000

Setting mm : 4.1
Tolerance mm + : 0.2
Shutoff solenoid
Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.7
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-:0.5Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 str. + : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Not a mandala.	1
Del. quantity cm3/1000 strokes : 8.5	†
Tolerance	LOAD DEDENISHE OTIOT OF DELIVERY
	+ LOAD-DEPENDENT START OF DELIVERY
	+ SETTING
Shutoff solemoid	TYMENO ATHER TRANSPORTED
Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
TALE ARI THEOL	<b>†</b>
IDLE DELIVERY	Rated speed rpm : 1500
	+ Del. quantity
Rated speed rpm : 440	+ cm3/1000 strokes : 2.6
Del. quantity	+ Tolerance
cm3/1000 strokes : 16.0	+ cm3/1000 str. +-: 0.1
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 1.0	+ Volt : 12
Spread	+
cm3/1000 strokes : 2.0	+
Shutoff salenoid	† INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	+
	TIMING DEVICE CHARACTERISTIC
HIGH IDLE SETTING	+
	+ Rated speed rpm : 2000
Rated speed rpm : 490	+ Aneroid pressure
Del. quantity	+ hPa : 1000
cm3/1000 strokes : 16.0	+
Tolerance	+ SV travel mm : 6.5
cm3/1000 str. +-: 1.0	+ Tolerance mm + : 0.4
Shutoff solenoid	+ Check
Volt : 12	+ tolerance mm + : 0.7
	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
	+
Rated speed rpm : 2575	+ Rated speed rpm : 900
Pressure hPa : 1000	+ Ameroid pressure
Pressure hPa : 1000  Del. quantity	+ Aneroid pressure + hPa : 1000
Del. quantity	+ Aneroid pressure + hPa : 1000
Del. quantity cm3/1000 strckes : 14.0	+ hPa : 1000
Del. quantity cm3/1000 strckes : 14.0 Tolerance	+ hPa : 1000 + SV travel mm : 1.2
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0	+ hPa : 1000 - SV travel mm : 1.2 - Tolerance mm +-: 0.4
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid	hPa : 1000 SV travel mm : 1.2 Tolerance mm +-: 0.4 Check
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0	hPa : 1000  SV travel mm : 1.2  Tolerance mm +-: 0.4  Check  tolerance mm +-: 0.7
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12	hPa : 1000  SV travel mm : 1.2  Tolerance mm + : 0.4  Check  tolerance mm + : 0.7  Shutoff solenoid
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid	hPa : 1000  SV travel mm : 1.2  Tolerance mm +-: 0.4  Check  tolerance mm +-: 0.7
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12 STARTING FUEL DELIVERY	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150	hPa : 1000  SV travel mm : 1.2  Tolerance mm +-: 0.4  Check  tolerance mm +-: 0.7  Shutoff solenoid
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 2000
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance	hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0	hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +- : 3.0	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2
Del. quantity cm3/1000 strckes : 14.0 Tolerance cm3/1000 str. +-: 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Anercia pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp

Shutoff solenoid Volt	:	12	‡	Del. quantity cm3/1000 strokes :	3.0
OVERFLOW QUANTITY	•		‡	Tolerance cm3/1000 str. +-:	3.0
Rated speed rpm	:	2150	‡	Check tolerance cm3/1000s. +-:	3.0
Aneroid pressure hPa	:	1000	‡	Shutoff solenoid Volt :	12
Overflow quantity ccm/10s	· :	97.2	‡	Rated speed rpm :	750
Tolerance +-	:	41.6	‡	Aneroid pressure hPa :	350
Check tolerance			<u>†</u>	Del. quantity cm3/1000 strokes :	46.0
ccm/10s +- Shutoff solenoid	:	41.6	1	Tolerance cm3/1000 str. +-:	
Volt	:	12	+	Check tolerance cm3/1000s. +-:	
Rated speed rpm Aneroid pressure	:	500	Ŧ	Shutoff solenoid Volt :	12
hPa	:	1000	Ŧ		
Overflow quantity ccm/10s	:	63.8	‡	Rated speed rpm : Aneroid pressure	
Tolerance ccm/10s +-	:	22.2	‡	hPa : Del. quantity	1000
Check tolerance			‡	cm3/1000 strokes : Tolerance	
ccm/10s +- Shutoff solenoid	:	22.2	‡	cm3/1000 str. + : Check tolerance	
Volt	:	12	‡	cm3/1000s. +-: Shutoff solenoid	2.2
DELIVERY AND BREA	KAWA	Y CHARAC	TERISTIC	Volt :	12
Rated speed rpm Aneroid pressure	:	2575	1	Rated speed rpm : Aneroid pressure	2000
hPa Del. quantity	:	1000	<u> </u>	hPa : Del. quantity	1000
cm3/1000 strokes Tolerance	:	14.0	1	cm3/1000 strokes : Tolerance	52.0
cm3/1000 str. + Check tolerance	:	2.0	1	cm3/1000 str. +-: Check tolerance	1.0
cm3/1000s. +- Shutoff solenoid	:	4.0	+	cm3/1000s. +-: Shutoff solenoid	2.2
Volt	:	12	Ŧ	Volt :	12
Rated speed rpm Aneroid pressure	:	2375	Ŧ	Rated speed rpm :	500
hPa	:	1000	Ŧ	Aneroid pressure hPa :	1000
Del. quantity cm3/1000 strokes	:	39.0	Ŧ	Del. quantity cm3/1000 strokes :	48.3
Tolerance cm3/1000 str. +-		5.0	‡	Tolerance cm3/1000 str. +-:	1.5
Check tolerance	:	٥.٠	E	0 h 1 4 - 1 - 4 - 4 - 4 - 4	
cm3/1000s. +-		6.0	‡	Check tolerance cm3/1000s. +:	3.0
			‡		3.0 12
cm3/1000s. +- Shutoff solenoid Volt Rated speed rpm		6.0	† † †	<pre>cm3/1000S. +-: Shutoff solenoid Volt : Rated speed rpm :</pre>	12
cm3/1000s. +- Shutoff solenoid Volt	:	6.0 12	+ + + + + + + + + + + + + + + + + + + +	cm3/1000s. +-: Shutoff solenoid Volt :	12

Del. quantity	+ Del. quantity
cm3/1000 strokes : 54.0	- cm3/1000 strokes : 2.6
Tolerance	+ Tolerance
cm3/1000 str. + : 0.5	+  cm3/1000  str. + + : 0.1
Check tolerance	+ Check tolerance
cm3/1000s. +-: 2.2	+ cm3/1000s. +-: 0.1
Shutoff solenoid	- Shutoff solenoid
Volt : 12	+ Volt : 12
	1
	+ DELIVERY DIFFERENCE
MECHANICAL SHUTOFF	
	Rated speed rpm : 1500
Rated speed rpm : 2000	Del. quantity
Aneroid pressure	+ cm3/1000 strokes : 5.0
hPa : 1000	+ Tolerance
Del. quantity	+  cm3/1000  str. + : 3.0
cm3/1000 strokes : 1.5	+ Check tolerance
Tolerance	+  cm3/1000s. + : 3.0
cm3/1000 str. +-: 1.5	- Shutoff solenoid
Check tolerance	+ Volt : 12
cm3/1000s. +-: 1.5	+
Shutoff solenoid	+ PRESSURE DIFFERENCE
Volt : 12	+
	Rated speed rpm : 1500
	+ Supply pomp
ELECTR. SHUTOFF	pressure bar : 4.5
CONTROL LEVER, IDLE STOP	+ Tolerance bar $+$ : 0.6
	+ Shutoff solenoid
Rated speed rpm : 400	+         Volt         :         12
Del. quantity	+
cm3/1000 strokes : 1.5	TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance	+
cm3/1000 str. +-: 1.5	+ Rated speed rpm : 1500
Check tolerance	† Tolerance mm ++: 0.7
cm3/1000s. +-: 1.5	+ Check
	† tolerance mm +-: 0.8
	† Shutoff solenoid
	† Volt : 12
	†
	†
	† START TRANSITION
AUGALITAIA I AAN AGGERTA	† <u></u>
CHECKING LOAD-DEPENDENT	Rated speed rpm : 380
START OF DELIVERY	+ Del. quantity
ACI TUCAL ATECRATION	+ cm3/1000 strokes : 35.0
DELIVERY DIFFERENCE	† Tolerance
Data d annual must a 4500	+ cm3/1000 str. +-: 10.0
Rated speed rpm : 1500	+ Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.0	† Volt : 12
	<b>T</b>
Tolerance	Ť
cm3/1000 str. +-: 1.0 Check tolerance	ACCEMBLY AND AD HIGHWITH DIMPNICTONS
cm3/1000s. +-: 4.5	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
Shutoff solenoid	† Dimension K mm : 3,3
Volt : 12	
12	,
TIMING-DEVICE TRAVEL DIFFERENCE	+ Dimension KF mm : 6,0 + Tolerance mm +-: +-0,2
ITHITING-DEATOR INWARD DILLEKENCE	1
Rated speed rpm : 1500	+ Dimension MS mm : 1,3 + Tolerance mm +-: +-0,2
Rated speed rpm : 1500	T Total ance mill 7 : T-U/C

CONTROL LEVER POSITION SET

Control lever position YA mm : 18,8..22,8

Control lever

position YB mm : 78,0..92,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.03.94 Test oil : ISO 4113

Part no. : 0 460 494 344 Pump designation : VE4/9F2250R472-1

Customer—spec. information Customer : PSA

Motor : XUD 9 TE-Y

### TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

# REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm +- : +-0,02
Outlet : A

### INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Aneroid pressure

hPa : 1000

Setting mm : 4.1
Tolerance mm + : 0.2
Shutoff colonaid

Shutoff solenoid

Volt : 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.7
Tolerance bar + : 0.3
Shutoff solenoid

Volt : 12

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 str. +- : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Not minutally	1
Del. quantity	†
cm3/1000 strokes : 8.5	+
Tolerance	+ LOAD-DEPENDENT START OF DELIVERY
cm3/1000 str. +-: 0.5	+ SETTING
Shutoff solenoid	
Volt : 12	- TIMING-DEVICE TRAVEL DIFFERENCE
. 12	J. ITHING PEATOR INVALE NIFFERENCE
TOLE OF THEORY	T 0-1-1-1 4500
IDLE DELIVERY	+ Rated speed rpm : 1500
	+ Del. quantity
Rated speed rpm : 440	+ cm3/1000 strokes : 2.6
Del. quantity	-}- Tolerance
cm3/1000 strokes : 16.0	+ cm3/1000 str. $+$ : 0.1
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 1.0	+ Volt : 12
Spread	7 1000
	Ť
cm3/1000 strokes : 2.0	
Shutoff solenoid	- INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	+
	+ TIMING DEVICE CHARACTERISTIC
HIGH IDLE SETTING	+
	Rated speed rpm : 2000
Rated speed rpm : 490	+ Aneroid pressure
Del. quantity	+ hPa : 1000
	† 1174 : 1000
cm3/1000 strokes : 16.0	†
Tolerance	+ SV travel mm : 6.5
cm3/1000 str. +-: 1.0	+ Tolerance mm +-: 0.4
Shutoff salenoid	+ Check
Volt : 12	tolerance mm +-: 0.7
	+ Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
TOLE BOTTO OF BED THEODER TO	1
0.77	T
Dotod chood nom . 35/5	
Rated speed rpm : 2575	+ Rated speed rpm : 900
Pressure hPa : 1000	† Aneroid pressure
Pressure hPa : 1000 Del. quantity	
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0	Aneroid pressure : 1000
Pressure hPa : 1000 Del. quantity	† Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance	Aneroid pressure hPa : 1000  SV travel mm : 1.2
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 14.0  Tolerance  cm3/1000 str. + : 2.0  Shutoff solenoid	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +-: 2.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 14.0  Tolerance  cm3/1000 str. + : 2.0  Shutoff solenoid	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +: 0.3
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +: 0.3 Shutoff solenoid
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +: 0.3
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff sclencid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff sclencid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY  CONTROL LEVER, IDLE STOP  Rated speed rpm : 200	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900
Pressure hPa : 1000  Del. quantity cm3/1000 strokes : 14.0  Tolerance cm3/1000 str. +- : 2.0  Shutoff sclencid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0  Tolerance cm3/1000 str. +- : 15.0  Shutoff sclencid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. + : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY  CONTROL LEVER, IDLE STOP  Rated speed rpm : 200	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +: 0.4 Check tolerance mm +: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance cm3/1000 str. +- : 3.0	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm + : 0.4 Check tolerance mm + : 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.2
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +- : 2.0 Shutoff solenoid Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. +- : 15.0 Shutoff solenoid Volt : 12  SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP  Rated speed rpm : 200 Del. quantity cm3/1000 strokes : 53.0 Tolerance	Aneroid pressure hPa : 1000  SV travel mm : 1.2 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 6.8 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 900 Aneroid pressure hPa : 1000 Supply pomp

Shutoff solenoid Volt	•	12	-	t	Del. quantity cm3/1000 strokes		3.0
	•	12	-	Ţ	Tolerance	•	
OVERFLOW QUANTITY			-	İ	cm3/1000 str. +- Check tolerance	:	3.0
Rated speed rpm	:	2150	-	+	cm3/1000s. +-	:	3.0
Aneroid pressure hPa	:	1000	-	‡	Shutoff solenoid Volt	:	12
Overflow quantity			-	+			
ccm/10s Tolerance	:	97.2	-	<b>†</b>	Rated speed rpm Anaroid pressure	:	750
ccm/10s +-	:	41.6	-	+	hPa	:	350
Check tolerance			-	‡	Del. quantity cm3/1000 strokes	:	46.0
ccm/10s +- Shutoff solenoid	:	41.6	-	+	Tolerance		
Volt	:	12	-	Ţ	cm3/1000 str. +- Check tolerance	•	0.5
Rated speed rpm	:	500	-	†	cm3/1000s. +- Shutoff solenoid	:	3.0
Aneroid pressure	•		-	Ŧ	Volt	:	12
hPa Overflow quantity	:	1000	-	t	Rated speed rpm	:	2150
ccm/10s	:	63.8	-	-	Aneroid pressure	•	
Tolerance ccm/10s +-	•	22.2	<u>-</u>	t	hPa Del. quantity	:	1000
	•		-	+	cm3/1000 strokes	:	50.1
Check tolerance ccm/10s +-	:	22.2	-	‡	Tolerance cm3/1000 str. +-	:	1.0
Shutoff solenoid			-	+	Check tolerance	•	
Volt	:	12	-	‡	cm3/1000S. +- Shutoff solenoid	:	2.2
DELIVERY AND BREAK	AWA	Y CHARAC	TERISTIC -	+	Volt	:	12
Rated speed rpm	:	2575	-	Ŧ	Rated speed rpm	:	2000
Aneroid pressure hPa		1000	-	İ	Aneroid pressure hPa		1000
Del. quantity	•		-	+	Del. quantity	•	
cm3/1000 strokes Tolerance	:	14.0	-	‡	cm3/1000 strokes Tolerance	:	52.0
cm3/1000 str. +	:	2.0	-	+	cm3/1000 str. +-	:	1.0
Check tolerance cm3/1000s. +-	:	4.0	-	‡	Check tolerance cm3/1000s. +-	:	2.2
Shutoff solenoid	_		-	+	Shutoff sclenoid		
Volt	•	12		-	Volt	:	12
Rated speed rpm Aneroid pressure	:	2375	- -	1	Rated speed rpm Aneroid pressure	:	500
hPa	:	1000	-	<u> </u>	hPa	:	1000
Del. quantity cm3/1000 strokes	•	39.0	7	ţ	Del. quantity cm3/1000 strokes	•	48.3
Tolerance			-	+	Tolerance	•	
cm3/1000 str. +- Check tolerance	:	5.0	7	‡	cm3/1000 str. +- Check tolerance	:	1.5
cm3/1000s. +-	:	6.0	-	+	cm3/1000s. +-	:	3.0
Shutoff solenoid Volt	:	12	7	-	Shutoff solenoid Volt	:	12
Dated speed spe		2750	7	t	Dated coord nom		1250
Rated speed rpm Aneroid pressure	:		7	Ţ.	Rated speed rpm Aneroid pressure	•	
hPa	:	1000	-	+	hPa	:	1000
⊔∩/.							

Del. quantity	† Del. quantity
cm3/1000 strokes : 54.0	+ cm3/1000 strokes : 2.6
Tolerance	† Tolerance
cm3/1000 str. +-: 0.5	+ cm3/1000 str. $+$ : 0.1
Check tolerance	+ Check tolerance
cm3/1000s. +-: 2.2	+ cm3/1000s. +-: 0.1
Shutoff solenoid	Shutoff solenoid
Volt : 12	+ Volt : 12
	†
	† DELIVERY DIFFERENCE
MECHANICAL SHUTOFF	+
	+ Rated speed rpm 1500
Rated speed rpm : 2000	+ Del. quantity
Aneroid pressure	+ cm3/1000 strokes : 5.0
hPa : 1000	+ Tolerance
Del. quantity	+ cm3/1000 str. + : 3.0
cm3/1000 strokes : 1.5	Check tolerance
Tolerance	- cm3/1000s. + : 3.0
	→ Shutoff solenoid
Check tolerance	♦ Volt : 12
cm3/1000s. +-: 1.5	<del>1</del>
Shutoff solenoid	+ PRESSURE DIFFERENCE
Volt : 12	4
	+ Rated speed rpm : 1500
	Supply pomp
ELECTR. SHUTOFF	préssure bar : 4.5
CONTROL LEVER, IDLE STOP	Tolerance bar + : 0.6
CONTROL ESVERY THE STO	Shutoff solenoid
Rated speed rpm : 400	
	† Volt : 12
Del. quantity	†
cm3/1000 strokes : 1.5	† TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance	
	• • • • • • • • • • • • • • • • • • •
cm3/1000 str. +-: 1.5	Rated speed rpm : 1500
Check tolerance	Rated speed rpm : 1500 Tolerance mm +-: 0.7
Check tolerance	Tolerance mm +-: 0.7 Check
Check tolerance	Tolerance mm + : 0.7 Check tolerance mm + : 0.8
Check tolerance	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid
Check tolerance	Tolerance mm + : 0.7 Check tolerance mm + : 0.8
Check tolerance	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid
Check tolerance	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12
Check tolerance	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380
Check tolerance cm3/1000s. +-: 1.5	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380 Del. quantity
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE	Tolerance mm +-: 0.7 Check tolerance mm +-: 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance
CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5 Shutoff solenoid	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +0,1
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5 Shutoff solenoid	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5 Shutoff solenoid Volt : 12	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +0,1 Dimension KF mm : 6,0
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5 Shutoff solenoid	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +0,1 Dimension KF mm : 6,0 Tolerance mm + : +0,2
Check tolerance cm3/1000s. +-: 1.5  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 4.5 Shutoff solenoid Volt : 12	Tolerance mm + : 0.7 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  START TRANSITION  Rated speed rpm : 380 Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 str. + : 10.0 Shutoff solenoid Volt : 12  ASSEMBLY AND ADJUSTMENT DIMENSIONS  Dimension K mm : 3,3 Tolerance mm + : +0,1 Dimension KF mm : 6,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 28,8..32,8

Control lever position YB mm : 68,0..82,0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.06.95 Test oil : ISO 4113

: 0 460 494 419 Pump designation : VE4/9F2050R476-1

Customer-spec. information

Customer Motor

: IVECO-SOFIM : 8140.97,2500

Power KW 85.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-:

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance ban + : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

bar 130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

**REMARKS** 

### BEGINNING OF DELIVERY

#### Prestroke

: 0,2 (as of UT) man Tolerance mm +-: +-0,02 Check

tolerance mm +-: +-0,04

### INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1400

Aneroid pressure

1000

6.0 Setting mm Tolerance mm +-: 0.2

Shutoff solenoid

Volt 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1400

Aneroid pressure hPa

1000

Supply pomp

pressure bar 6.4 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 68.0

Tolerance

cm3/1000 str. + :0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 3.0

Shutoff solenoid

Volt 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 str. + :

0.5

Shutoff solenoid

12

Check tolerance

cm3/1000s.3.0

HOUSING-FIXED IDLE SPRING	+ DELIVERY DIFFERENCE
RESIDUAL QUANTITY SETTING	+ Rated speed rpm : 1000
Rated speed rpm : 550 Del. quantity	Pressure hPa : 1000  Del. quantity
cm3/1000 strokes : 3.0 Tolerance	cm3/1000 strokes : -20.0
cm3/1000 str. +-: 2.5 Shutoff solenoid	cm3/1000 str. +: 1.0  Shutoff solenoid
Volt : 12	Volt : 12
IDLE DELIVERY	PRESSURE DIFFERENCE
Rated speed rpm : 425 Del. quantity	Rated speed rpm : 1000 Aneroid pressure
cm3/1000 strokes : 12.5 Tolerance	hPa : 1000 Del. quantity
cm3/1000 str. +-: 2.0 Spread	cm3/1000 strokes : -0.2 Tolerance
cm3/1000 strokes : 2.5 Shutoff solenoid	cm3/1000 str. + : 0.1 Shutoff solenoid
Volt : 12	Volt : 12
HIGH IDLE SETTING	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 500 Del. quantity	Rated speed rpm : 1000 Aneroid pressure
cm3/1000 strokes : 13.0 Tolerance	hPa : 1000 + Del. quantity
cm3/1000 str. +-: 2.0 Shutoff solenoid	cm3/1000 strokes : -0.8 Tolerance
Volt : 12	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
FULL-LOAD SPEED REGULATION	Volt : 12
Rated speed rpm : 2400	
Pressure hPa : 1000 Del. quantity	INJECTION-PUMP TEST SPECIFICATIONS     +
cm3/1000 strokes : 38.0 Tolerance	TIMING DEVICE CHARACTERISTIC
cm3/1000 str. + : 3.0 Shutoff solenoid	Rated speed rpm : 1800 Aneroid pressure
Volt : 12	+ hPa : 1000
STARTING FUEL DELIVERY	SV travel mm : 8.7
Rated speed rpm : 100	Tolerance mm + : 0.4 Check
Del. quantity cm3/1000 strokes : 62.0	tolerance mm + : 0.7 Shutoff solenoid
Tolerance cm3/1000 str. +-: 12.0	+ Volt : 12
Shutoff solenoid Volt : 12	Rated speed rpm : 1000 Aneroid pressure
	+ hPa : 1000
	+ SV travel mm : 3.0
LOAD-DEPENDENT START OF DELIVERY SETTING	+ Tolerance mm +-: 0.4 + Check
	+ tolerance mm +-: 0.7

Shutoff solenoid				+				
Volt	:	12		+	Check tolerance		/1 /	
Rated speed rpm	:	2050		I	ccm/10s +- Shutoff solenoid	•	41.6	
Aneroid pressure		4000		+	Volt	:	12	
hPa	:	1000		İ	DELIVERY AND BREA	KAN	A CHVDVC	TEDISTIC
SV travel mm	:	10.0		Ŧ	DESTREM AND DIVER		TI CHAINAC	ICKIDIIC
Tolerance mm +- Check	:	0.4		†	Rated speed rpm	:	2400	
tolerance mm +	:	0.7		I	Aneroid pressure hPa	:	1000	
Shutoff solenoid		45		+	Del. quantity			
Volt	:	12		İ	cm3/1000 strokes Tolerance	:	33.0	
Rated speed rpm	:	1400		+	cm3/1000 str. +-	:	3.0	
Aneroid pressure hPa		1000		†	Check tolerance cm3/1000s. +-		4.0	
IIFQ	•	1000		Ţ	Shutoff solenoid	•	4.0	
SUPPLY PUMP PRESS	URE	CHARACTERI	STIC	+	Volt	:	12	
Rated speed rpm	:	2050		Į	Rated speed rpm	:	2600	
Aneroid pressure		4000		+	Aneroid pressure		4000	
hPa Supply pomp	•	1000		Į.	hPa Del. quantity	:	1000	
pressure bar	:	8.7		+	cm3/1000 strokes	:	7.0	
Tolerance bar +- Shutoff solenoid	:	0.3		1	Shutoff solenoid Volt	•	12	
Volt	:	12		+		•		
Rated speed rpm	:	600		İ	Rated speed rpm Aneroid pressure	:	2750	
Aneroid pressure	•			Ŧ	hPa	:	1000	
hPa Supply pomp	:	1000		†	Del. quantity cm3/1000 strokes		1.5	
pressure bar	:	3.4		Į	Tolerance	•	1.5	
Tolerance bar +-	:	0.3		+	cm3/1000 str. +-	:	1.5	
Shutoff solenoid Volt	:	12		‡	Check tolerance cm3/1000s. +-	· :	1.5	
AUEDEL ALL ALLANETTY				+	Shutoff solenoid		40	
OVERFLOW QUANTITY				‡	Volt	:	12	
Rated speed rpm	:	500		+	Rated speed rpm	:	600	
Overflow quantity ccm/10s	:	111.1		1	Aneroid pressure hPa	:	350	
Tolerance				+		•		
ccm/10s +-	:	22.2		<u> </u>	LDA/ HBA stroke mm	:	5.0	
Check tolerance				+	Del. quantity		_	
ccm/10s +- Shutoff solenoid	:	22.2		İ	cm3/1000 strokes Tolerance	:	48.0	
Volt	:	12		Ŧ	cm3/1000 str. +-	:	0.5	•
Rated speed rpm	:	2050		t	Check tolerance cm3/1000s. +-		2.5	
Aneroid pressure	•			Ţ	Shutoff solenoid	•		
hPa	:	1000		†	Volt	:	12	
Overflow quantity ccm/10s	:	138.8		Į	Rated speed rpm	:	2050	
Tolerance	_	1.1		+	Aneroid pressure		1000	
ccm/10s +-	•	41.6		Ţ	hPa Del. quantity	į	1000	
				+	cm3/1000 strokes	:	69.5	

Tolerance cm3/1000 str. +-: 1.5 Check tolerance cm3/1000s. +-: 2.2	Check tolerance cm3/1000s. +-: 1.5
Shutoff solenoid	Į
Valt : 12	RESIDUAL QUANTITY
Rated speed rpm : 1950	+
Aneroid pressure hPa : 1000	+ Rated speed rpm : 900 + Del. quantity
Del. quantity cm3/1000 strokes : 69.0	cm3/1000 strokes : 1.0 Töleränce
Tolerance cm3/1000 str. +-: 1.5	+ cm3/1600 str. + : 1.0 + Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
Rated speed rpm : 600	IDLE DELIVERY
Aneroid pressure hPa : 1000	+ Rated speed rpm : 475
Del. quantity cm3/1000 strokes : 55.5 Tolerance	+ Del. quantity + cm3/1000 strokes : 5.0
cm3/1000 str. +-: 2.0 Shutoff solenoid	+ Tolerance + cm3/1000 str. → : 3.0 + Shutoff solenoid
Volt : 12	Volt : 12
Rated speed rpm : 1200	+
Aneroid pressure hPa : 1000	+ CHECKING LOAD-DEPENDENT START OF DELIVERY
Del. quantity cm3/1000 strokes : 68.0 Tolerance	DELIVERY DIFFERENCE
cm3/1000 str. +-: 0.5 Check tolerance	Rated speed rpm : 1000 Aneroid pressure
cm3/1000s. +-: 2.0 Shutoff solenoid	+ hPa : 1000 + Del. quantity
Volt : 12	cm3/1000 strokes : -22.0  Tolerance
	cm3/1000 str. + : 3.0 Check tolerance
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
*	+ Volt : 12
Rated speed rpm : 425 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5 Tolerance	+ Rated speed rpm : 1000
cm3/1000 str. + : 1.5 Check tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000s.	+ Del. quantity + cm3/1000 strokes : -0.8
FULL-LOAD STOP CONTROL LEVER	+ Tolerance + cm3/1000 str. +-: 0.1
Rated speed rpm : 425 Del. quantity	<pre>+ Check tolerance + cm3/1000s. +-: 0.1</pre>
cm3/1000 strokes : 1.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-: 1.5	+ DELIVERY DIFFERENCE

Rated speed rpm	:	1000
Aneroid pressure	:	1000
Del. quantity cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	1.0
Shutoff solenoid Volt	:	12
TIMING-DEVICE TRAV	VEL	DIFFERENCE
Rated speed rpm	;	1000
Aneroid pressure hPa	:	1000
Check tolerance mm +-	;	0.4
Shutoff solenoid Volt	:	12
EXHAUST-GAS RECIR		
Rated speed rpm Del. quantity	:	1000
cm3/1000 strokes Tolerance	:	23.0
cm3/1000 str. +- Check tolerance	:	1.0
cm3/1000s. +- Shutoff solenoid	:	2.5
Volt	:	12
START TRANSITION		
Rated speed rpm	:	350
Del. quantity cm3/1000 strokes	:	42.0
Tolerance cm3/1000 str. +	:	6.0
Shutoff solenoid Volt	:	12
Detail executives		200
Rated speed rpm Del. quantity	:	200
cm3/1000 strokes Tolerance		62.0
cm3/1000 str. +- Shutoff solenoid	:	12.0
Volt	:	12
ASSEMBLY AND ADJUS	STME	NT DIMENSIONS
t DA /		
LDA/		<b>5</b> 0

Tolerance mm +-: +-0,2 Dimension MS mm : 1,3 Tolerance mm +-: +-0,2 KSB travel mm : 13,0

POTENTIOMETER

1. measurement

: 5,0 voltage Volt

1. measurement voltage Volt : 2,1

MICROSWITCH

SET

: ARF 12,0

End of test-specification sheet

5.0 HBA stroke mm : Dimension KF mm : 5,8

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

Part no. : 0 460 494 332 Pump designation : VE4/9F2400R486

Customer-spec. information Customer : RENAULT : G8T - 790 Motor 60.0 Power KW

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature \*C Tolerance \*C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

Tolerance bar + :

Test Lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 450

REMARKS

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,0 Tolerance mm +:+0.02Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 2.5 Tolerance mm +-: 0.2 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar 6.2 : Tolerance bar +-: 0.3

Shutoff solenoid Volt

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes :

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:

Shutoff solenoid

Volt 12

IDLE DELIVERY

Rated speed rpm : 385

Del. quantity

cm3/1000 strokes : 14.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid		+ Rated speed rpm : 1250
Volt	: 12	+ Del. quantity
		+ cm3/1000 strokes : -0.8
HIGH IDLE SETTING		+ Tolerance
		+ cm3/1000 str. $+$ : 0.1
Rated speed rpm	: 435	+ Shutoff solenoid
Del. quantity		→ Volt : 12
cm3/1000 strokes	: 12.0	+
Tolerance		
cm3/1000 str. +	-: 2.0	+ INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid		†
Volt	: 12	+ TIMING DEVICE CHARACTERISTIC
<b>-</b>		*
FULL-LOAD SPEED R	REGULATION	+ Rated speed rpm : 2000
Data dama a dama	2400	† 24.
Rated speed rpm	: 2600	+ SV travel mm : 6.4
Del. quantity cm3/1000 strokes	. 27.0	† Tolerance mm +-: 0.4
Tolerance	: 23.0	† Check
cm3/1000 str. +-	-: 3.0	+ tolerance mm +-: 0.6 + Shutoff solenoid
Shutoff solenoid	3.0	+ Volt : 12
Volt	: 12	I
<b>1</b> 000	• 14	Rated speed rpm : 1000
STARTING FUEL DEL	TVFRY	Added Speed 1 pilly . 1000
3 11 11 11 11 11 11 11 11 11 11 11 11 11		→ SV travel mm : 1.0
Rated speed rpm	: 100	+ Tolerance mm + : 0.4
Del. quantity		+ Check
cm3/1000 strokes	: 60.0	1 +-1 0 /
Tolerance		- Shutoff solenoid
cm3/1000 str. +-	-: 15.0	→ Volt : 12
Shutoff solenoid		Rated speed rpm : 1.0  SV travel mm : 1.0  Tolerance mm +: 1.2  Check
Volt	: 12	+ Rated speed rpm : 750
		+
		+ SV travel mm : 1.0
		Tolerance mm +: 1.2
LOAD-DEPENDENT ST	ART OF DELIVERY	+ Check
SETTING		tolerance mm +: 1.2
DEL TUEDU DIFFEREN	105	+ Shutoff solenoid
DELIVERY DIFFEREN	KE	† Volt : 12
Rated speed rpm	. 1250	T KCD/AFD Vol+ . 42
Del. quantity	• 1600	KSB/AFB Volt : 12
cm3/1000 strokes	: -7.1	SUPPLY PUMP PRESSURE CHARACTERISTIC
Tolerance	• • • •	<b>)</b>
cm3/1000 str. +	-: 1.0	Rated speed rpm: : 2000 Supply pomp pressure bar : 8.2 Tolerance bar +-: 0.3
Shutoff solenoid		+ Supply pomp
Volt	: 12	pressure bar : 8.2
		Tolerance bar + : 0.3
PRESSURE DIFFEREN	ICE	+ Shutoff solenoid
		+ Volt : 12
Rated speed rpm	: 1250	+
Del. quantity		+ Rated speed rpm : 750
cm3/1000 strokes	: -0.2	+ Supply pomp
Tolerance	5.4	pressure bar : 4.7
cm3/1000 str. +	·: 0.1	† Tolerance bar + : 0.3
Shutoff solenoid	. 45	+ Shutoff solenoid
Volt	: 12	† Volt : 12
TIMINO_DOUTOR TOA	VEL DIEEEDENCE	OVEDELOU CHANTITY
TIMING-DEVICE TRA	NET DILLEKENIE	OVERFLOW QUANTITY
		Τ

Rated speed rpm :	2300	+ Check tolerance
Overflow quantity ccm/10s :	97.2	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Tolerance	71.6	+ Volt : 12
ccm/10s +-:	41.6	+
		+ Rated speed rpm : 1000
Check tolerance	14 1	+ Del. quantity
ccm/1üs +-: Shutoff solenoid	41.6	+ cm3/1000 strokes : 37.7
Volt :	12	+ Tolerance + cm3/1000 str. +-: 1.5
	, C	- Check tolerance
Rated speed rpm :	750	+ cm3/1000s. $+$ : 2.3
Overflow quantity	470.0	† Shutoff solenoid
ccm/10s : Tolerance	63.8	† Volt : 12
ccm/10s +-:	22.2	Rated speed rpm : 2000
	CC. C	Del. quantity
Check tolerance		+ cm3/1000 strokes : 40.3
ccm/10s +:	22.2	† Tolerance
Shutoff solenoid	40	+ cm3/1000 str. +-: 1.0
Volt :	12	+ Check tolerance + cm3/1000s. +-: 2.3
DELIVERY AND BREAKAW	AY CHARACTERISTIC	+ Shutoff solenoid
	***************************************	+ Volt : 12
Rated speed rpm :	2600	+
Del. quantity	07. 5	+ Rated speed rpm : 750
cm3/1000 strokes :	23.0	+ Del. quantity
Tolerance cm3/1000 str. +-:	3.0.	+ cm3/1000 strokes : 36.5 + Tolerance
Check tolerance	<b>3.0</b> .	+ cm3/1000 str. + : 1.5
cm3/1000s. +-:	4.0	+ Check tolerance
Shutoff solenoid	<b>A G</b>	+ cm3/1000s. +-: 2.3
Volt :	12	+ Shutoff solenoid
Rated speed rpm :	2500	$\frac{1}{2}$ Volt : 12
Del. quantity	L)00	Rated speed rpm : 1250
cm3/1000 strokes :	35.5	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 37.4
cm3/1000 str. +-:	4.0	+ Tolerance
Check tolerance cm3/1000s. +-:	5.0	+ cm3/1000 str. + : 0.5 + Check tolerance
Shutoff solenoid	J. U	+ cm3/1000s. +-: 2.3
Volt :	12	+ Shutoff solenoid
		+ Volt : 12
Rated speed rpm :	28 <b>C</b> 0	<del>†</del>
Del. quantity cm3/1000 strokes :	2.5	†
Tolerance	2. )	ELECTR, SHUTOFF
cm3/1000 str. +-:	2.5	+ CONTROL LEVER, IDLE STOP
Check tolerance		+
cm3/1000s. +-:	2.5	+ Rated speed rpm : 385
Shutoff solenoid	12	+ Del. quantity + cm3/1000 strokes : 1.5
Volt :	16	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm :	2300	+ cm3/1000 str. +-: 1.5
Del. quantity		† Check tolerance
cm3/1000 strokes :	41.0	+ cm3/1000s. +-: 1.5
Tolerance	1.0	+ Spread
cm3/1000 str. +-:	1.0	- cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER	Shutoff solenoid Volt : 12
Rated speed rpm : 385  Del. quantity	EXHAUST-GAS RECIRCULATION
cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5	Rated speed rpm : 1250 Del. quantity
Spread cm3/1000 strokes : 5.0	cm3/1000 strokes : 23.0 Tolerance
Check tolerance cm3/1000s. +: 1.5	cm3/1000 str. +-: 0.5 Check tolerance
Spread cm3/1000 strokes : 5.0	cm3/1000s. +-: 2.5 Shutoff solenoid
CHECKING LOAD-DEPENDENT START OF DELIVERY	Volt : 12 START TRANSITION
DELIVERY DIFFERENCE	Rated speed rpm : 350
Rated speed rpm : 1250	Del. quantity cm3/1000 strokes : 30.0
Del. quantity cm3/1000 strokes : -9.4 Tolerance	Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid
cm3/1000 str. + : 2.0 + Check tolerance +	Volt : 12
cm3/1000s. +: 2.0 +	Rated speed rpm : 200
Volt : 12 + TIMING-DEVICE TRAVEL DIFFERENCE +	Del. quantity cm3/1000 strokes : 70.0 Tolerance
Rated speed rpm : 1250	cm3/1000 str. +-: 25.0 Shutoff solenoid
Del. quentity cm3/1000 strokes : -0.8	Volt : 12
Tolerance + cm3/1000 str. + : 0.1 + Check tolerance +	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +: 0.1 + Shutoff solenoid	Dimension K mm : 3,7 Tolerance mm +-: +-0,1
Volt : 12 +	Dimension KF mm : 6,0 Tolerance mm +-: +-0,2
DELIVERY DIFFERENCE	Dimension MS mm : 0,9 Tolerance mm +- : +-0,2
Rated speed rpm : 1250 + Del. quantity + cm3/1000 strokes : 5.0 +	MICROSWITCH
Tolerance + 3.0 +	SET
Check tolerance cm3/1000s. +: 3.0	mm : 0,83,0
Shutoff solenoid + Volt : 12 +	End of toot ensitientian about
TIMING-DEVICE TRAVEL DIFFERENCE	End of test-specification sheet
Rated speed rpm : 1250 Tolerance mm +-: 0.2	
Check tolerance mm +-: 0.3	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

: 0 460 494 333 Part no. Pump designation: VE4/9F2400R486-1

Customer-spec, information Customer : RENAULT : G8T - 790 CA Motor Power KW 60.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature \*C : Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-:

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

**REMARKS** 

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,0 Tolerance mm +-:+-0.02Outlet

# INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

2.5 Setting mm Tolerance mm + : 0.2 Shutoff solenoid

12 Volt

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1250 Supply pomp

pressure bar : 6.2 Tolerance bar +-: 0.3 Shutoff solenoid

12 Volt

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 str. +-:0.5 Spread

cm3/1000 strokes :

Shutoff solenoid

Volt 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. +-: 2.0

Shutoff solenoid

Volt 12

# IDLE DELIVERY

Rated speed rpm : 385

Del. quantity

cm3/1000 strokes : 14.0

Tolerance

cm3/1000 str. +-: 2.0

Spread

cm3/1000 strokes :

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1250 - Del. quantity
HIGH IDLE SETTING	+ cm3/1000 strokes : -0.8 + Tolerance
Rated speed rpm : 435	+ cm3/1000 str. +-: 0.1 + Shutoff solenoid
Del quantity cm3/1000 strokes : 12.0	12 volt : 12
Tolerance	Ţ -
cm3/1000 str. +-: 2.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2600	SV travel mm : 6.4
Del. quantity cm3/1000 strokes : 23.0	Tolerance mm + : 0.4 Check
Tolerance cm3/1000 str. +-: 3.0	tolerance mm + : 0.6 Shutoff solenoid
Shutoff solenoid Volt : 12	+ Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1000
STARTING FUEL DELIVERY	T SV travel mm : 1.0
Rated speed rpm : 100 Del. quantity	Tolerance mm + : 0.4 Check
cm3/1000 strokes : 60.0 Tolerance	tolerance mm + : 0.6 Shutoff solenoïd
cm3/1000 str. +-: 15.0	Volt : 12
Shutoff solenoid Volt : 12	Rated speed rpm : 750
	SV travel mm : 1.0
	† Tolerance mm + : 1.2
LOAD-DEPENDENT START OF DELIVERY SETTING	+ Check
25111140	+ tolerance mm +-: 1.2 + Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
Rated speed rpm : 1250 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : -7.1 Tolerance	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. + : 1.0 Shutoff solenoid	Rated speed rpm : 2000 Supply pomp
Volt : 12	+ pressure bar : 8.2
PRESSURE DIFFERENCE	Tolerance bar +-: 0.3 Shutoff solenoid
Patrid amond and 1250	+ Volt : 12
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 750
cm3/1000 strokes : -0.2 Tolerance	+ Supply pomp + pressure bar : 4.7
cm3/1000 str. +-: 0.1	Tolerance bar +: 0.3
Shutoff solenoid	Shutoff solenoid
Volt : 12	† Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	OVERFLOW QUANTITY

Rated speed rpm : 2300	• -• •
	† Check tolerance
Overflow quantity	+ cm3/1000s. $+-$ : 2.3
ccm/10s : 97.2	+ Shutoff solenoid
Tolerance	† Volt : 12
ccm/10s + : 41.6	+
	+ Rated speed rpm : 1000
Check tolerance	
	+ Del. quantity
ccm/10s +-: 41.6	+ cm3/1000 strokes : 37.7
Shutoff solenoid	+ Tolerance
Volt : 12	+ cm3/1000 str. +-: 1.5
• 12	
	+ Check tolerance
Rated speed rpm : 750	+ cm3/1000s. $+-$ : 2.3
Overflow quantity	+ Shutoff solenoid
ccm/10s : 63.8	
	+ Volt : 12
Tolerance	+
ccm/10s +-: 22.2	+ Rated speed rpm : 2000
	+ Del. quantity
Olerati Antina man	
Check tolerance	- cm3/1000 strokes : 40.3
ccm/10s +-: 22.2	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. $+$ : 1.0
· ·	
Volt : 12	+ Check tolerance
	+ cm3/1000s. +-: 2.3
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 2600	. 12
	T n
Del. quantity	+ Rated speed rpm : 750
cm3/1000 strokes : 23.0	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 36.5
cin3/1000 str. +: 3.0	+ Tolerance
Check tolerance	+ cm3/1000 str. +-: 1.5
cm3/1000s. + : 4.0	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. $+-$ : 2.3
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
	+ Volt : 12
Rated speed rpm : 2500	- Voice . 12
	+
Del. quantity	Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 35.5	Rated speed rpm : 1250 Del. quantity
Del. quantity cm3/1000 strokes : 35.5 Tolerance	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 37.4
Del. quantity cm3/1000 strokes : 35.5 Tolerance	Rated speed rpm : 1250 Del. quantity
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0	Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 37.4 Tolerance
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 37.4  Tolerance  cm3/1000 str. +-: 0.5
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 37.4  Tolerance  cm3/1000 str. + : 0.5  Check tolerance
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 37.4  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.3
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +-: 4.0 Check tolerance cm3/1000s. +-: 5.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity  cm3/1000 strokes : 37.4  Tolerance  cm3/1000 str. + : 0.5  Check tolerance  cm3/1000s. + : 2.3
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +-: 4.0 Check tolerance cm3/1000s. +-: 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.3 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. +- : 2.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.3 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +-: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +-: 0.5 Check tolerance cm3/1000s. +-: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. +- : 2.5 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 41.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. +- : 2.5 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 41.0 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. +- : 2.5 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 41.0	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5
Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 5.0 Shutoff solenoid Volt : 12  Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. +- : 2.5 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  Rated speed rpm : 2300 Del. quantity cm3/1000 strokes : 41.0 Tolerance	Rated speed rpm : 1250  Del. quantity cm3/1000 strokes : 37.4  Tolerance cm3/1000 str. +: 0.5 Check tolerance cm3/1000s. +: 2.3 Shutoff solenoid Volt : 12  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 385 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance cm3/1000s. +: 1.5 Spread

	1
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1250
TOLE LOAD STOP CONTROL LEVER	Tolerance mm +-: 0.2
Rated speed rpm : 385	Check
Del. quantity	tolerance mm +-: 0.3
cm3/1000 strokes : 1.5	Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.5	+
Spread	
cm3/1000 strokes : 5.0	+ EXHAUST-GAS RECIRCULATION
Check tolerance	1250
cm3/1000s. + : 1.5	Rated speed rpm : 1250
cm3/1000 strokes : 5.0	+ Del. quantity + cm3/1000 strokes : 23.0
Charles : 3.0	Tolerance
	cm3/1000 str. +-: 0.5
	Check tolerance
	- cm3/1000s. +-: 2.5
	+ Shutoff solenoid
	† Volt : 12
CHECKING LOAD-DEPENDENT	+
START OF DELIVERY	START TRANSITION
DELIVERY DIFFERENCE	Rated speed rpm : 350
DECIVERY DITTERENSE	Del. quantity
Rated speed rpm : 1250	- cm3/1000 strokes : 30.0
Del. quantity	Tolerance
cm3/1000 strokes : -9.4	cm3/1000 str. +-: 15.0
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 2.0	+ Volt : 12
Check tolerance	†
cm3/1000s. + : 2.0	Patrid annual man (200
Shutoff solenoid - Volt : 12	+ Rated speed rpm : 200 + Del. quantity
1000	- cm3/1000 strokes : 70.0
TIMING-DEVICE TRAVEL DIFFERENCE	Tolerance
Tanana yerada minada yan anama	cm3/1000 str. + : 25.0
Rated speed rpm : 1250	Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : -0.8	+
Tolerance	
cm3/1000 str. + : 0.1	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance - cm3/1000s. +-: 0.1	† Dimension K mm : 3,7
Shutoff solenoid	+ Tolerance mm +-: +-0.1
Volt : 12	Dimension KF mm : 6,0
•	Tolerance mm + : +-0,2
DELIVERY DIFFERENCE	Dimension MS mm : 0,9
	Tolerance mm + : +-0,2
Rated speed rpm : 1250	†
Del. quantity - cm3/1000 strokes : 5.0 -	MICROCHITCH
cm3/1000 strokes : 5.0 - Tolerance -	↓     MICROSWITCH       ↓     SET
cm3/1000 str. +-: 3.0	
Check tolerance	mm : 0,83,0
cm3/1000s. +-: 3.0	: ARF 12,0
Shutoff solenoid	+
Volt : 12 -	+
•	+

TIMING-DEVICE TRAVEL DIFFERENCE

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.03.95 Test oil : ISO 4113

Part no. : 0 460 494 405 Pump designation : VE4/9F2400R486-2

Customer-spec. information
Customer : RENAULT
Motor : G8T - 790
Power KW : 60.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

Overflow

restriction mm : 0.55

Inlet prass. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

# REMARKS

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Supply pomp

pressure bar : 6.2 Tolerance bar +-: 0.3 Shutoff solenoid

Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity cm3/1000 strokes : 37.4

Tolerance

cm3/1000 str. +-: 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 str. ← : 2.0

Shutoff solenoid

Volt : 12

## IDLE DELIVERY

Rated speed rpm : 385

Del. quantity

cm3/1000 strokes : 14.0

Tolerance

cm3/1000 str. + : 2.0

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

# HIGH IDLE SETTING

Rated speed rpm : 435

Del. quantity

cm3/1000 strokes : 12.0

Tolonopoo	
Tolerance + cm3/1000 str. + : 2.0 +	
Shutoff solenoid +	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12 +	
FULL-LOAD SPEED REGULATION +	TIMING DEVICE CHARACTERISTIC
TOLE-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2600	
Del. quantity +	SV travel mm : 6.4
cm3/1000 strokes : 23.0 + Tolerance +	Tolerance mm +-: 0.4 Check
cm3/1000 str. +-: 3.0	tolerance mm 4-: 0.6
Shutoff solenoid +	Shutoff solenoid
Volt : 12 +	Volt : 12
STARTING FUEL DELIVERY +	Rated speed rpm : 1000
TARTING FOLL DELIVERY	Nated Speed Phil : 1800
Rated speed rpm : 100 +	SV travel mm : 1.0
Del. quantity	Tolerance mm +-: 0.4
cm3/1000 strokes : 60.0	Check tolerance mm +-: 0.6
cm3/1000 str. +: 15.0	Shutoff solenoid
Shutoff solenoid +	Volt : 12
Volt : 12 +	Rated speed rpm : 750
I	Rated speed rpm : 750
+	SV travel mm : 1.0
LOAD-DEPENDENT START OF DELIVERY +	Tolerance mm +: 1.2
SETTING	Check tolerance mm +-: 1.2
DELIVERY DIFFERENCE	Shutoff solenoid
+	Volt : 12
Rated speed rpm : 1250	MODI/AFD Walt - 40
Del. quantity + cm3/1000 strokes : -7.1 +	KSB/AFB Volt : 12
Tolerance +	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +: 1.0 +	
Shutoff solenoid + Volt : 12 +	Rated speed rpm : 2000
. 12	Supply pomp pressure bar : 8.2
PRESSURE DIFFERENCE	Tolerance bar +: 0.3
+	Shutoff solenoid
Rated speed rpm : 1250 + Del. quantity +	Volt : 12
cm3/1000 strokes : -0.2	Rated speed rpm : 750
Tolerance	Supply pomp
cm3/1000 str. + : 0.1 + Shutoff solenoid	pressure bar : 4.7 Tolerance bar +-: 0.3
Volt : 12	Shutoff solenoid
1	Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	OUTDELOIL OLIANTITY
Rated speed rpm : 1250	OVERFLOW QUANTITY
Del. quantity	Rated speed rpm : 2300
cm3/1000 strokes : -0.8	Overflow quantity
Tolerance + : 0.1 +	ccm/10s : 97.2 Tolerance
Shutoff solenoid	ccm/10s +-: 41.6
Volt : 12	
+	

	1 Dal months.
Check tolerance	+ Del. quantity + cm3/1000 strokes : 37.7
ccm/10s + : 41.6	+ Tolerance
Shutoff solenoid	+ cm3/1000 str. +-: 1.5
Volt : 12	+ Check tolerance
Rated speed rpm : 750	+ cm3/1000s. +-: 2.3 ÷ Shutoff solenoid
Overflow quantity	Volt : 12
ccm/10s : 63.8	+
Tolerance	+ Rated speed rpm : 2000
ccm/10s + : 22.2	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 40.3 + Tolerance
ccm/10s + : 22.2	- cm3/1000 str. +-: 1.0
Shutoff solenoid	- Check tolerance
Volt : 12	+ cm3/1000s. +-: 2.3
	+ Shutoff solenoid
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Volt : 12
Rated speed rpm : 2600	Rated speed rpm : 750
Del. quantity	+ Del. quantity
cm3/1000 strokes : 23.0	+ cm3/1000 strokes : 36.5
Tolerance	† Tolerance
cm3/1000 str. +-: 3.0	+ cm3/1000 str. +-: 1.5
Check tolerance	- Check tolerance
cm3/1000s. +-: 4.0 Shutoff solenoid	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Volt : 12	Volt : 12
	+
Rated speed rpm : 2500	Rated speed rpm : 1250
Del. quantity	+ Del. quantity
cm3/1000 strokes : 35.5 Tolerance	+ cm3/1000 strokes : 37.4
cm3/1000 str. + : 4.0	+ Tolerance + cm3/1000 str. +-: 0.5
Check tolerance	Check tolerance
cm3/1000s. +-: 5.0	+ cm3/1000s. +-: 2.3
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
Rated speed rpm : 2800	Ť
Del. quantity	I
cm3/1000 strokes : 2.5	+ ELECTR. SHUTOFF
Tolerance	CONTROL LEVER, IDLE STOP
cm3/1000 str. + : 2.5	705
Check tolerance cm3/1000s. +-: 2.5	+ Rated speed rpm : 385
Shutoff solenoid	+ Del. quantity + cm3/1000 strokes : 1.5
Volt : 12	+ Tolerance
	+ cm3/1000 str. +-: 1.5
Rated speed rpm : 2300	† Check tolerance
Del. quantity	+ cm3/1000s. +-: 1.5
cm3/1000 strokes : 41.0 Tolerance	+ FULL-LOAD STOP CONTROL LEVER
cm3/1000 str. +-: 1.0	TOLL LOAD STOP CONTROL LEVER
Check tolerance	+ Rated speed rpm : 385
cm3/1000s. ←: 2.3	Del. quantity
Shutoff solenoid	+ cm3/1000 strokes : 1.5
Volt : 12	+ Tolerance
Rated speed rpm : 1000	+ cm3/1000 str. +-: 1.5
nated speed right . Todd	1

Check tolerance cm3/1000s. +-: 1.5	Del. quantity cm3/1000 strokes : 23.0 Tolerance
	+ cm3/1000 str. +-: 0.5
	+ Check tolerance + cm3/1000s. +-: 2.5
	† Shutoff solenoid
CHECKING LOAD-DEPENDENT	† Volt : 12
START OF DELIVERY	START TRANSITION
DELIVERY DIFFERENCE	Rated speed rpm : 350  Del. quantity
Rated speed rpm : 1250	+ cm3/1000 strokes : 30.0
Del. quantity cm3/1000 strokes : -9.4	+ Tolerance + cm3/1000 str. +-: 15.0
Tolerance cm3/1000 str. + : 2.0	+ Shutoff solenoid + Volt : 12
Check tolerance cm3/1000s. +-: 2.0	‡
Shutoff solenoid	Rated speed rpm : 200
Volt : 12	+ Del. quantity + cm3/1000 strokes : 70.0
TIMING-DEVICE TRAVEL DIFFERENCE	+ Tolerance
Rated speed rpm : 1250	+ cm3/1000 str. +-: 25.0 + Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : -0.8 Tolerance	†
cm3/1000 str. +-: 0.1 Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +-: 0.1	Dimension K mm : 3,7
Shutoff solenoid Volt : 12	+ Tolerance mm + : +-0,1 + Dimension KF mm : KOT
• • • • • • • • • • • • • • • • • • • •	+ Dimension MS mm : 0,9
DELIVERY DIFFERENCE	Tolerance mm +-: +-0,2
Rated speed rpm : 1250 Del. quantity	MICROSW1TCH
cm3/1000 strokes : 5.0 Tolerance	SET
cm3/1000 str. +-: 3.0 Check tolerance	mm : 0,83,0 : ARF 12,0
cm3/1000s. +: 3.0 Shutoff solenoid	- ANT 12,0
Volt : 12	Ţ
TIMING-DEVICE TRAVEL DIFFERENCE	End of test-specification sheet
Rated speed rpm : 1250 Tolerance mm +-: 0.2	The of cest spectification sheet
Check tolerance mm +-: 0.3	Ŧ
Shutoff solenoid Volt : 12	Ŧ
	+
EXHAUST-GAS RECIRCULATION	1
Rated speed rpm : 1250	+

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Part no. : 0 460 494 406 Pump designation : VE4/9F2400R486-3

Customer-spec information
Customer : RENAULT
Motor : G8T-790 CA
Power KW : 60.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +- : 1

0verflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

### SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Supply pomp
pressure bar : 6.2
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 str. +- : 2.0
Shutoff solenoid
Volt : 12

# IDLE DELIVERY

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 str. +- : 2.0
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

### HIGH IDLE SETTING

Rated speed rpm : 435 Del. quantity cm3/1000 strokes : 12.0

Tolerance +	
cm3/1000 str. + : 2.0 + Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
FULL-LOAD SPEED REGULATION	Rated speed rpm : 2000
Rated speed rpm : 2600 + Del. quantity +	SV travel mm : 6.4
cm3/1000 strokes : 23.0	Tolerance mm +-: 0.4 Check
cm3/1000 str. +: 3.0 Shutoff solenoid	tolerance mm + : 0.6 Shutoff solenoid
Volt : 12	Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1000
Rated speed rpm : 100  Del. quantity	SV travel mm : 1.0 Tolerance mm +-: 0.4
cm3/1000 strokes : 60.0	Check tolerance mm + : 0.6
cm3/1000 str. + : 15.0 + Shutoff solenoid +	Shutoff solenoid Volt : 12
Volt : 12	Rated speed rpm : 750
1	SV travel mm : 1.0
LOAD-DEPENDENT START OF DELIVERY + SETTING +	Tolerance mm +-: 1.2 Check
DELIVERY DIFFERENCE +	tolerance mm +-: 1.2 Shutoff solenoid
Rated speed rpm : 1250 +	Volt : 12
Del. quantity + cm3/1000 strokes : -7.1 +	KSB/AFB Volt : 12
Tolerance + 1.0 + + + + + + + + + + + + + + + + + + +	SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid Volt : 12	Rated speed rpm : 2000 Supply pomp
PRESSURE DIFFERENCE +	pressure bar : 8.2 Tolerance bar +-: 0.3
Rated speed rpm : 1250 +	Shutoff solenoid Volt : 12
Del. quantity + cm3/1000 strokes : -0.2 +	Rated speed rpm : 750
Tolerance + cm3/1000 str. +-: 0.1	Supply pomp pressure bar : 4.7
Shutoff solenoid + Volt : 12 +	Tolerance bar +-: 0.3 Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFERENCE +	Volt : 12
Rated speed rpm : 1250 +	OVERFLOW QUANTITY
Del. quantity + cm3/1000 strokes : -0.8 +	Rated speed rpm : 2300 Overflow quantity
Tolerance + cm3/1000 str. + : 0.1 +	ccm/10s : 97.2 Tolerance
Shutoff solenoid + Volt : 12 +	ccm/10s + : 41.6
+	

Check tolerance	+ Del. quantity + cm3/1000 strokes : 37.7
ccm/10s + : 41.6 Shutoff solenoid	+ Tolerance + cm3/1000 str. + : 1.5
Volt : 12 Rated speed rpm : 750	theck tolerance cm3/1000s. +-: 2.3
Rated speed rpm : 750 Overflow quantity ccm/10s : 63.8	+ Shutoff solenoid + Volt : 12
Tolerance	Rated speed rpm : 2000
	+ Del. quantity + cm3/1000 strokes : 40.3
Check tolerance ccm/10s + : 22.2 Shutoff solenoid	+ Tolerance + cm3/1000 str. + : 1.0
Volt : 12	+ Check tolerance + cm3/1000s. +: 2.3 - Stutoff solenoid
DELIVERY AND BREAKAWAY CHARACTERISTIC	volt : 12
Rated speed rpm : 2600 Del. quantity	Rated speed rpm : 750 Del. quantity
cm3/1000 strokes : 23.0 Tolerance	cm3/1000 strokes : 36.5
cm3/1000 str. +-: 3.0 Check tolerance	- cm3/1000 str. +-: 1.5 - Check tolerance
cm3/1000S. +-: 4.0 Shutoff solenoid	+ cm3/1000s. +-: 2.3 + Shutoff solenoid
Volt : 12	+ Volt : 12
Rated speed rpm : 2500 Del. quantity	+ Rated speed rpm : 1250 + Del. quantity
cm3/1000 strokes : 35.5 Tolerance	cm3/1000 strokes : 37.4 Tolerance
cm3/1000 str. +-: 4.0 Check tolerance	+ cm3/1000 str. + : 0.5 + Check tolerance
cm3/1000S. +-: 5.0 Shutoff solenoid	+ cm3/1000s. +: 2.3 + Shutoff solenoid
Volt : 12	+ Volt : 12
Rated speed rpm : 2800 Del. quantity cm3/1000 strokes : 2.5	FI FOTO CINTOS
cm3/1000 strokes : 2.5 Tolerance cm3/1000 str. + : 2.5	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
Check tolerance cm3/1000s. +: 2.5	Rated speed rpm : 385 Del. quantity
Shutoff solenoid Volt : 12	+ cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm : 2300	+ cm3/1000 str. +-: 1.5 + Check tolerance
Del. quantity cm3/1000 strokes : 41.0	- cm3/1000s. +-: 1.5 - Spread
Tolerance cm3/1000 str. +-: 1.0	cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. +: 2.3	+ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid Volt : 12	+ Rated speed rpm : 385 + Del. quantity
Rated speed rpm : 1000	+ cm3/1000 strokes : 1.5 +

Tolerance cm3/1000 str. +: 1.5 Spread cm3/1000 strokes: 5.0 Check tolerance cm3/1000s. +: 1.5 Spread cm3/1000 strokes: 5.0	Shutoff solenoid Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 str. + : 0.5 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid
CHECKING LOAD-DEPENDENT START OF DELIVERY	Volt : 12 START TRANSITION
DELIVERY DIFFERENCE	
Rated speed rpm : 1250 Del. quantity	Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 30.0
cm3/1000 strokes : -9.4	Tolerance cm3/1000 str. +-: 15.0
cm3/1000 str. +-: 2.0 Check tolerance	Shutoff solenoid Volt : 12
cm3/1000s. +-: 2.0	voct : 12
Volt : 12	Rated speed rpm : 200 Del. quantity
TIMING-DEVICE TRAVEL DIFFERENCE	cm3/1000 strokes : 70.0 Tolerance
Rated speed rpm : 1250 Del. quantity	cm3/1000 str. +-: 25.0 Shutoff solenoid
cm3/1000 strokes : -0.8	Volt : 12
cm3/1000 str. + : 0.1 + Check tolerance	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000s. +-: 0.1 + Shutoff solenoid +	Dimension K mm : 3,7
Volt : 12	Tolerance mm + : +0,1 Dimension KF mm : KOT
DELIVERY DIFFERENCE	Dimension MS mm : 0,9 Tolerance mm +- : +-0,2
Rated speed rpm : 1250 + Del. quantity +	******
cm3/1000 strokes : 5.0 + Tolerance + Tolerance	MICROSWITCH SET
cm3/1000 str. +-: 3.0 +	mm : 0,83,0
cm3/1000s. +-: 3.0 +- Shutoff solenoid +	: ARF 12,0
Volt : 12 + TIMING-DEVICE TRAVEL DIFFERENCE +	
Rated speed rpm : 1250 + Tolerance mm +-: 0.2 +	End of test-specification sheet
Check tolerance mm +: 0.3	
1	

Refer to Service : adjustment instru See microcard(s)	ctions.
Edition Test oil	: 02.01.96 : ISO 4113
Part no. Pump designation	: 0 460 414 096 : VE4/11F2100R493
Customer-spec. in Customer Motor Power KW	formation : FIAT-AUTO : M711 KT 19.D : 72.0
TEST BENCH REQUIR	EMENTS
Calibrating-oil return temperature °C Tolerance °C +-	
Overflow restriction mm	: 0.75
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05
Test nozzle holde assembly	: 1 688 901 116
Opening pressure bar Tolerance bar +	: 207 : 3
Test lines	: 1 680 750 073
Outside diameter	: 6.00
x inside diameter x length mm	: 2.00 : 450
REMARKS	<del></del>

TIMING DEVICE TRA	VEL
Rated speed rpm Aneroid pressure	: 1500
hPa	: 1000
Setting mm Tolerance mm +-	: 6.2 : 0.2
Shutoff solenoid Volt	: 12
KSB/AFB Volt	: 12
SUPPLY PUMP PRESS	URE
Rated speed rpm	: 1500
Aneroid pressure hPa Supply pomp	: 1000
pressure bar Tolerance bar +-	: 7.3 : 0.2
Shutoff solenoid Volt	: 12
KSB/AFB Volt	: 12
FULL-LOAD DELIVER	Y WITH BOOST PRESSURE
	: 1750
Aneroid pressure hPa	: 1000
Del. quantity cm3/1000 strokes Tolerance	: 63.0
cm3/1000 str. +-	: 0.5
cm3/1000 strokes Check tolerance	: 4.0
cm3/1000S. Shutoff solenoid	: 4.5
Volt	: 12
KSB/AFB Volt	: 12
FULL-LOAD DELIV.	WITHOUT BOOST PRESSURE
Rated speed rpm Del. quantity	: 750
cm3/1000 strokes Tolerance	: 44.5
cm3/1000 str. +- Shutoff solenoid	
Volt Check tolerance	: 12
cm3/1000s.	: 4.5

KSB/AFB Volt : 12

IDLE SETTING

Data damentary (FO	
Rated speed rpm : 450  Del. quantity	Rated speed rpm : 1500
cm3/1000 strokes : 8.0 - Tolerance -	- Del. quantity - cm3/1000 strokes : -9.0
cm3/1000 str. +-: 2.0 Shutoff solenoid	- Tolerance - cm3/1000 str. +-: 1.0
Volt : 12 - Spread -	- Shutoff solenoid - Volt : 12
cm3/1000 strokes : 6.0 - Check tolerance -	- KSB/AFB Volt : 12
cm3/1000s. : 6.5	- PRESSURE DIFFERENCE
KSB/AFB Volt : 12	Rated speed rpm : 1500
- <del>1</del>	Del. quantity - cm3/1000 strokes : -0.2 - Tolerance
FULL-LOAD SPEED REGULATION -	cm3/1000 str. +-: 0.1
Rated speed rpm : 2400 - Pressure hPa : 1000 -	- Shutoff solenoid - Volt : 12
Del. quantity = 32.0	KSB/AFB Volt : 12
Tolerance - 2.0 - 2.0	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid Volt : 12	Rated speed rpm : 1500 - Del. quantity
KSB/AFB Volt : 12	- cm3/1000 strokes : -0.6 - Tolerance
STARTING FUEL DELIVERY	- cm3/1000 str. + : 0.1 - Shutoff solenoid
<del>-</del>	- Volt : 12
Rated speed rpm : 100 - Del. quantity -	- KSB/AFB Volt : 12
cm3/1000 strokes : 70.0 - Tolerance -	
cm3/1000 str. +-: 15.0 Shutoff solenoid	INJECTION-PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
KSB/AFB Volt : 12	- Rated speed rpm : 2000 - Aneroid pressure
SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP	- hPa : 1000
Rated speed rpm : 100	SV travel mm : 8.1 Tolerance mm +-: 0.4
Del. quantity cm3/1000 strokes : 32.0	- Check - tolerance mm +-: 0.9
Tolerance cm3/1000 str. + : 1.0	- Shutoff solenoid - Volt : 12
Shutoff solenoid Volt : 12	- KSB/AFB Volt : 12
KSB/AFB Volt : 12	- - Rated speed rpm : 750 - Aneroid pressure
LOAD-DEPENDENT START OF DELIVERY	- hPa : 1000
SETTING	- SV travel mm : 2.3 - Tolerance mm +: 0.4
DELIVERY DIFFERENCE	-

Check		+	Tolerance
tolerance mm +: Shutoff solenoid	0.9	1	ccm/10s +-: 41.6
Volt :	12	1	Check tolerance ccm/10s + : 41.6
KSB/AFB Volt :	12	1	Shutoff solenoid Volt : 12
Rated speed rpm : Aneroid pressure	450	$\frac{1}{1}$	KSB/AFB Volt : 12
hPa :	1000	Ŧ	Rated speed rpm : 750
SV travel mm :	3.0	Ţ	Aneroid pressure
Tolerance mm +-: Check	0.1	1	hPa : 1000 Overflow quantity
tolerance mm + : Shutoff solenoid	1.0	Ì	ccm/10s : 111.1 Tolerance
Volt :	12	1	ccm/10s +-: 22.2
Rated speed rpm : Aneroid pressure	1000	1	Check tolerance ccm/10s +-: 22.2
hPa :	1000	1	Shutoff solenoid Volt : 12
SV travel mm :	4.6	+	
Tolerance mm + : Check	1.0	†	KSB/AFB Volt : 12
tolerance mm +-: Shutoff solenoid	1.2	1	DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt :	12	1	Rated speed rpm : 2400 Aneroid pressure
SUPPLY PUMP PRESSUR	E CHARACTERISTIC	1	hPa : 1000 Del. quantity
Rated speed rpm : Aneroid pressure	2100	Ī	cm3/1000 strokes : 32.0 Tolerance
hPa : Supply pomp	1000	1	cm3/1000 str. +-: 2.0 Check tolerance
pressure bar : Tolerance bar +-:	8.5 0.3	1	cm3/1000s. + : 6.0 Shutoff solenoid
Shutoff solenoid	12	Ŧ	Volt : 12
Volt :		7	KSB/AFB Volt : 12
KSB/AFB Volt :	12	‡	Rated speed rpm : 2500
Rated speed rpm : Aneroid pressure	750	‡	Aneroid pressure hPa : 1000
hPa : Supply pomp	1000	Ŧ	Del. quantity cm3/1000 strokes : 20.0
pressure bar : Tolerance bar +-:	5.5 0.3	‡	Check tolerance cm3/1000s. +-: 6.0
Shutoff solenoid Volt :	12	‡	Shutoff solenoid Volt : 12
KSB/AFB Volt :	12	Ī	KSB/AFB Volt : 12
OVERFLOW QUANTITY		$\frac{1}{1}$	Rated speed rpm : 2300 Aneroid pressure
Rated speed rpm : Aneroid pressure	2100	1	hPa : 1000 Del. quantity
hPa : Overflow quantity	1000	Ŧ	cm3/1000 strokes : 44.0 Tolerance
ccm/10s quantity	138.8	Ţ	cm3/1000 str. +-: 4.0

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Shutoff solenoid Volt	:	12	†	Del. quantity cm3/1000 strokes : 63.5	
KSB/AFB Volt	:	12	Ī	Tolerance cm3/1000 str. +-: 2.5 Check tolerance	
Rated speed rpm Aneroid pressure	:	2650	Ī	cm3/1000s. +-: 4.0 Shutoff solenoid	
hPa Del. quantity	:	1000	+	Volt : 12	
cm3/1000 strokes Tolerance		1.5	‡	KSB/AFB Volt : 12	
cm3/1000 str. +- Check tolerance		1.5	‡	Rated speed rpm : 750 Aneroid pressure	
cm3/1000s. +- Shutoff solenoid	:	1.5	‡	hPa : 1000 Del. quantity	
Volt KSB/AFB Volt	:	12 12	Ŧ	<pre>cm3/1000 strokes : 75.0 Tolerance cm3/1000 str. +- : 4.5</pre>	
Rated speed rpm	:	750	Ī	Shutoff solenoid Volt : 12	
Aneroid pressure	:	400	<u> </u>	KSB/AFB Volt : 12	
Del. quantity cm3/1000 strokes	:	64.0	+	Rated speed rpm : 1750	
Tolerance cm3/1000 str. +-	:	0.5	‡	Aneroid pressure hPa : 1000	
Check tolerance cm3/1000s. +- Shutoff solenoid	:	4.0	‡	Del. quantity cm3/1000 strokes : 63.0	
Volt	:	12	Ŧ	Tolerance cm3/1000 str. +-: 0.5 Check tolerance	
KSB/AFB Volt	:	12	<u> </u>	cm3/1000s. +-: 3.5 Shutoff solenoid	
Rated speed rpm Aneroid pressure	:	2100	+	Volt : 12	
hPa Del. quantity	:	1000	‡		<del></del>
cm3/1000 strokes Tolerance		61.0	‡	CONTROL LEVER, IDLE STOP	
cm3/1000 str. +- Check tolerance cm3/1000s. +-		2.0 4.0	Ŧ	Rated speed rpm : 450 Del. quantity	
Shutoff solenoid	•	12	<u> </u>	cm3/1000 strokes : 1.5 Tolerance	
KSB/AFB Volt	:	12	+	cm3/1000 str. +-: 1.5 Check tolerance	
Rated speed rpm	:	550	‡	cm3/1000s. + : 1.5	
Del. quantity cm3/1000 strokes	:	47.5	‡	FULL-LOAD STOP CONTROL LEVER	
Tolerance cm3/1000 str. +- Shutoff solenoid	:	3.0	Ī	Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 1.5	
Volt	:	12	Ī	Tolerance cm3/1000 str. + : 1.5	
KSB/AFB Volt	:	12	+	Check tolerance cm3/1000s. +-: 1.5	
Rated speed rpm Aneroid pressure	:	1500	+	IDLE DELIVERY	
hPa	:	1000	+		

Rated speed rpm : 500	1
Del. quantity	Rated speed rpm : 1500
cm3/1000 strokes : 1.5	+ Del. quantity
Tolerance	- cm3/1000 strokes : 5.0
cm3/1000 str. + : 1.5	+ Tolerance
Check tolerance	+ cm3/1000 str. $+$ : 1.0
cm3/1000cs. +-: 1.5	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. +-: 1.0
Volt : 12	+ Shutoff solenoid
MODIATE VALLE . 40	† Volt : 12
KSB/AFB Volt : 12	† KSB/AFB Volt : 12
Rated speed rpm : 470	T KOB/APB VOLL : 12
Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 3.0	TANIFIC PERIOD TO THE PERIOD
Tolerance	Rated speed rpm : 1500
cm3/1000 str. + : 3.0	Tolerance mm —: 0.4
Check tolerance	+ Check
cn3/1000s. +-: 4.0	tolerance mm + : 0.4
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	† Volt : 12
KSB/AFB Volt : 12	t KOD (ATD. Walte
KSB/AFB Volt : 12	- KSB/AFB Volt : 12
	+ EXHAUST-GAS RECIRCULATION
	+
	Rated speed rpm : 1000
CHECKING LOAD-DEPENDENT	+ Del. quantity
START OF DELIVERY	+ cm3/1000 strokes : 17.9
	· · · · · · · · · · · · · · · · · · ·
	+ Tolerance
DELIVERY DIFFERENCE	Tolerance - cm3/1000 str. +-: 1.0
DELIVERY DIFFERENCE	Tolerance - cm3/1000 str. +-: 1.0 - Check tolerance
DELIVERY DIFFERENCE Rated speed rpm : 1500	Tolerance - cm3/1000 str. +-: 1.0 - Check tolerance - cm3/1000s. +-: 2.5
DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity	Tolerance - cm3/1000 str. +-: 1.0 - Check tolerance - cm3/1000s. +-: 2.5 - Shutoff solenoid
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0	Tolerance - cm3/1000 str. +-: 1.0 - Check tolerance - cm3/1000s. +-: 2.5
DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity	Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0	Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0	Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-: 15.0
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance
DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000S. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +-: 0.1 Check tolerance	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 85.0
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 85.0 Tolerance
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 85.0
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. +-: 1.0 Check tolerance cm3/1000s. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-: 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : 85.0 Tolerance cm3/1000 str. +-: 15.0
Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12	Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 250 Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : 85.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid

KSB/AFB Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : K1 Dimension KF mm : 5,4 Tolerance mm +:+0.2

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0

1. measurement

: 2,0 voltage Volt

**MICROSWITCH** 

SET

: GST 76,9 mm

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

: 54,8..65,2 position YB mm

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.95 Test oil : ISO 4113

Part no. : 0 460 414 125 Pump designation : VE4/11F2100R493-1

Customer-spec. information
Customer : FIAY-AUTO
Motor : M711 NT 19.L
Power KW : 70.0

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 55
Tolerance °C +-: 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 116

Opening pressure

bar : 207 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 6.2
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 7.3
Tolerance bar + : 0.2
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000 str. +-:0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s.4.5 Shutoff solenoid Volt 12 KSB/AFB Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 str. + : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 4.5
KSB/AFB Volt : 12

IDLE SETTING

Sal Lau	/50	
Rated speed rpm : Del. quantity	450 +	Rated speed rpm : 1500
cm3/1000 strokes :	8.0	Del. quantity
Tolerance	+	cm3/1000 strokes : -9.0
cm3/1000 str. +-:	2.0	Tolerance
Shutoff solenoid	12	cm3/1000 str. +-: 1.0
Volt : Spread	T I	Shutoff solenoid Volt : 12
cm3/1000 strokes :	6.0	. 12
Check tolerance	+	KSB/AFB Volt : 12
cm3/100Cs. :	6.5	PRESSURE DIFFERENCE
KSB/AFB Volt :	12	PRESSURE DIFFERENCE
	+	Rated speed rpm : 1500
	+	Del. quantity
	1	cm3/1000 strokes : -0.2 Tolerance
FULL-LOAD SPEED REGU	LATION	cm3/1000 str. +-: 0.1
	+	Shutoff solenoid
Rated speed rpm :	2400	Volt : 12
Pressure hPa : Dei. quantity	1000	KSB/AFB Volt : 12
cm3/1000 strokes :	32.0	100/110 10(0
Tolerance	+	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str: Shutoff solenoid	2.0	Botod around the 1500
Volt :	12	Rated speed rpm : 1500 Del. quantity
	<del>}</del>	cm3/1000 strokes : -0.6
KSB/AFB Volt :	12 +	Tolerance
STARTING FUEL DELIVE	bv †	cm3/1000 str. + : 0.1
STARTING FOLL PERIVE	~·	Shutoff solenoid Volt : 12
Rated speed rpm :	+	Volt : 12
Rated speed rpm : Del. quantity	100	
Rated speed rpm : Del. quantity cm3/1000 strokes :	100	Volt : 12
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-:	100	Volt : 12
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid	70.0 70.0 15.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-:	70.0	Volt : 12  KSB/AFB Volt : 12
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid	70.0 70.0 15.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solencid Volt :	70.0 70.0 15.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solencid Volt : KSB/AFB Volt :	100 70.0 15.0 12 12	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solencid Volt :	100 70.0 15.0 12 12 NG FUEL DELIVERY	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt : KSB/AFB Volt : SETTING GRAD. STARTIFULL-LOAD STOP CONTR	70.0 70.0 15.0 12 12 NG FUEL DELIVERY	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm +-: 0.4
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solehoid Volt : KSB/AFB Volt : SETTING GRAD. STARTIFULL-LOAD STOP CONTR	70.0 70.0 15.0 12 12 NG FUEL DELIVERY	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solenoid Volt : KSB/AFB Volt : SETTING GRAD. STARTING FULL-LOAD STOP CONTROLL Rated speed rpm : Del. quantity	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm +-: 0.4
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Shutoff solencid Volt : KSB/AFB Volt : SETTING GRAD. STARTING FULL-LOAD STOP CONTRO Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance	70.0  70.0  15.0  12  12  NG FUEL DELIVERY OL LEVER  100  32.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Shutoff solencid Volt : KSB/AFB Volt :  SETTING GRAD. STARTI FULL-LOAD STOP CONTR Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- :	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solencid Volt :  KSB/AFB Volt :  SETTING GRAD. STARTI FULL-LOAD STOP CONTR  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solenoid	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  KSB/AFB Volt :  SETTING GRAD. STARTIFULL-LOAD STOP CONTR  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :	70.0 70.0 15.0 12 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0 12	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 750
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solencid Volt :  KSB/AFB Volt :  SETTING GRAD. STARTI FULL-LOAD STOP CONTR  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +-: Shutoff solenoid	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 750 Aneroid pressure
Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +: Shutoff solehoid Volt:  KSB/AFB Volt:  SETTING GRAD. STARTING FULL-LOAD STOP CONTR Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Shutoff solehoid Volt:  KSB/AFB Volt:	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0 12 12	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 750
Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :  KSB/AFB Volt :  SETTING GRAD. STARTIFULL-LOAD STOP CONTR  Rated speed rpm : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Shutoff solenoid Volt :	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0 12 12	<pre>Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 2.3</pre>
Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Shutoff solencid Volt:  KSB/AFB Volt:  SETTING GRAD. STARTIL FULL-LOAD STOP CONTR  Rated speed rpm: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Shutoff solenoid Volt:  KSB/AFB Volt:  LOAD-DEPENDENT START	70.0 70.0 15.0 12 12 NG FUEL DELIVERY OL LEVER 100 32.0 1.0 12 12	Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2000 Aneroid pressure hPa : 1000  SV travel mm : 8.1 Tolerance mm + : 0.4 Check tolerance mm + : 0.9 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 750 Aneroid pressure hPa : 1000

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Check tolerance mm +-	: 0.9	+ + Check tolerance
Shutoff solenoid Volt	: 12	ccm/10s +-: 41.6 Shutoff solenoid
KSB/AFB Volt	: 12	Volt : 12
Setting point KSB Rated speed rpm	: 450	KSB/AFB Volt : 12
Aneroid pressure hPa	: 1000	Rated speed rpm : 750
·		+ Aneroid pressure + hPe : 1000
SV travel mm Tolerance mm +- Check	: 3.0 : 0.1	+ Overflow quantity + ccm/10s : 111.1 + Tolerance
tolerance mm +- Shutoff solenoid	: 1.0	ccm/10s +-: 22.2
Volt	: 12	Check tolerance + : 22.2
Rated speed rpm Aneroid pressure	: 1000	Shutoff solenoid Volt : 12
hPa	: 1000	KSB/AFB Volt : 12
SV travel mm Tolerance mm +	: 4.6 : 1.0	DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid Volt	: 12	+ Rated speed rpm : 2400
SUPPLY PUMP PRESSU		Aneroid pressure hPa : 1000
Rated speed rpm	: 2100	Del. quantity  cm3/1000 strokes : 32.0
Aneroid pressure hPa	: 1000	+ Tolerance + cm3/1000 str. +-: 2.0
Supply pomp		+ Check tolerance
pressure bar Tolerance bar +	: 8.5 : 0.3	+ cm3/1000s. +-: 5.0 + Shutoff solenoid
Shutoff solenoid Volt	: 12	+ Volt : 12
KSB/AFB Volt	: 12	+ KSB/AFB Volt : 12
Rated speed rpm	: 750	Rated speed rpm : 2500 Aneroid pressure
Aneroid pressure hPa	: 1000	+ hPa : 1000 + Del. quantity
Supply pomp pressure bar	: 5.5	cm3/1000 strokes : 20.0 Check tolerance
Tolerance bar +- Shutoff solenoid		the cm3/1000s. the cm3/1000s. the cm3/1000s. the cm3/1000s.
Volt	: 12	+ Volt : 12
KSB/AFB Volt	: 12	+ KSB/AFB Volt : 12
OVERFLOW QUANTITY		Rated speed rpm : 2300 Aneroid pressure
Rated speed rpm Aneroid pressure	: 2100	+ hPa : 1000 + Del. quantity
hPa Overflow quantity	: 1000	+ cm3/1000 strokes : 44.0 + Tolerance
ccm/10s Tolerance	: 138.8	cm3/1000 str. +-: 4.0 Shutoff solenoid
ccm/10s +-	: 41.6	+ Volt : 12

			+	Aneroid pressure			
KSB/AFB Volt	:	12	+	hPa	:	1000	
Rated speed rpm	: 26	520	+	Del. quantity cm3/1000 strokes	:	63.5	
Aneroid pressure	:	1000	‡	Tolerance cm3/1000 str. +-	:	2.5	
Del. quantity cm3/1000 strokes	:	1.5	‡	Check tolerance cm3/1000s. +-	:	4.0	
Tolerance cm3/1000 str. +- Check tolerance	:	1.5	‡	Shutoff solenoid Volt	:	12	
cm3/1000s. +- Shutoff solenoid	:	1.5	Ŧ	KSB/AFB Volt	:	12	
Volt	:	12	Ŧ	Rated speed rpm Aneroid pressure	:	750	
KSB/AFB Volt	:	12	Ŧ	hPa Del. quantity	:	1000	
Rated speed rpm Aneroid pressure	: 7	'50	I	cm3/1000 strokes Tolerance	:	75.0	
hPa	:	400	1	cm3/1000 str. +- Shutoff solenoid	:	4.5	
LDA/ HBA stroke mm	:	7.4	1	Volt	:	12	
Del. quantity cm3/1000 strokes	:	64.0	+	KSB/AFB Volt	:	12	
Tolerance cm3/1000 str. +-	:	0.5	‡	Rated speed rpm Aneroid pressure	:	1750	
Check tolerance cm3/1000s. +-	:	4.0	+	hPa Del. quantity	:	1000	
Shutoff solenoid Volt	:	12	+	cm3/1000 strokes Tolerance		63.0	
KSB/AFB Volt	:	12	‡	cm3/1000 str. +- Check tolerance	:	0.5	
Rated speed rpm	: 21	00	‡	cm3/1000s. +- Shutoff solenoid	:	3.5	
Aneroid pressure hPa	:	1000	†	Volt	:	12	
Del. quantity cm3/1000 strokes	:	61.0	‡				
Tolerance cm3/1000 str. +	:	2.0	‡	ELECTR. SHUTOFF CONTROL LEVER, IDE	LE S	TOP	
Check tolerance cm3/1000s. +- Shutoff solenoid	:	4.0	Ŧ	Rated speed rpm	:	450	
Volt	:	12	Ŧ	Del. quantity cm3/1000 strokes Tolerance	:	1.5	
KSB/AFB Volt	:	12	Ī	cm3/1000 str. + Check tolerance	:	1.5	
Rated speed rpm Del. quantity	: 5	50	Ī	cm3/1000s. +-	:	1.5	
cm3/1000 strokes Tolerance	:	47.5	1	cm3/1000 strokes	:	5.0	
cm3/1000 str. +- Shutoff solenoid	:	3.0	‡	FULL-LOAD STOP CON	VTROL	L LEVER	
Volt	:	12	‡	Rated speed rpm Del. quantity	:	450	
KSB/AFB Volt	:	12	+	cm3/1000 strokes Tolerance	:	1.5	
Rated speed rpm	: 15	00	‡	cm3/1000 str. +-	:	1.5	

Check tolerance cm3/1000s. +-: 1.5	+ Shutoff solenoid + Volt : 12
IDLE DELIVERY	KSB/AFB Volt : 12
Rated speed rpm : 500 Del. quantity	DELIVERY DIFFERENCE
cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1500
cm3/1000 str. +-: 1.5 Check tolerance	+ Del. quantity + cm3/1000 strokes : 5.0
cm3/1000s. +-: 1.5 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 1.0
Volt : 12	+ Check tolerance + cm3/1000s. + : 1.0
KSB/AFB Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 470 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : 3.0 Tolerance	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. +-: 3.0 Check tolerance	Rated speed rpm : 1500 Tolerance mm + : 0.4
cm3/1000s. + : 4.0 Shutoff solenoid	+ Check + tolerance mm + : 0.4
Volt : 12	Shutoff solenoid Volt : 12
KSB/AFB Volt : 12	KSB/AFB Volt : 12
	+
	EXHAUST-GAS RECIRCULATION
CHECKING LOAD-DEPENDENT	+
CHECKING LOAD-DEPENDENT START OF DELIVERY	Rated speed rpm : 1000 Del. quantity
	Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 17.9 Tolerance
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500	Rated speed rpm : 1000  Del. quantity  cm3/1000 strokes : 17.9  Tolerance  cm3/1000 str. +- : 1.0  Check tolerance
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -9.0	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9 Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -9.0  Tolerance  cm3/1000 str. +-: 3.0	Rated speed rpm : 1000  Del. quantity  cm3/1000 strokes : 17.9  Tolerance  cm3/1000 str. +- : 1.0  Check tolerance  cm3/1000s. +- : 2.5  Shutoff solenoid  Volt : 12
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity  cm3/1000 strokes : -9.0  Tolerance  cm3/1000 str. +-: 3.0  Check tolerance	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +-: 3.0 Check tolerance cm3/1000s. +-: 4.0 Shutoff solenoid	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0 Check tolerance cm3/1000s. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0  Tolerance
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -9.0  Tolerance cm3/1000 str. + : 3.0  Check tolerance cm3/1000s. + : 4.0  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. +- : 15.0  Shutoff solenoid
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. +- : 15.0  Shutoff solenoid Volt : 12
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. +- : 3.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance cm3/1000 str. +- : 0.1	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. +- : 15.0  Shutoff solenoid
START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.6 Tolerance	Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 17.9  Tolerance cm3/1000 str. +- : 1.0  Check tolerance cm3/1000s. +- : 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  START TRANSITION  Rated speed rpm : 450 Del. quantity cm3/1000 strokes : 60.0  Tolerance cm3/1000 str. +- : 15.0  Shutoff solenoid Volt : 12

Del. quantity cm3/1000 strokes : 85.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt 12

KSB/AFB Volt 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

7.4

HBA stroke mm : Dimension K mm : K1 Dimension KF mm : KOT MS1 dimension mm : 1,2

Tolerance mm +-: +0,15/-0,1

MICROSWITCH

SET

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

position YB mm : 54,8..65,2

End of test a cification sheet

	+
BOSCH INJ. PUMP TEST SPECIFICATIONS	+ Setting mm : 1.8
	† Tolerance mm + : 0.1
Note remarks	+ Shutoff solenoid
	+ Volt : 12
Refer to Service Info for test and	CURRY COMP. DOCCOURT
adjustment instructions. See microcard(s) W400/	SUPPLY PUMP PRESSURE
see microcard(s) w400/	Poted aread area 1200
Edition : 21.06.95	+ Rated speed rpm : 1200 + Aneroid pressure
Test oil : ISO 4113	hPa : 1000
100 4115	+ Supply pomp
Part no. : 0 460 414 121	pressure bar : 6.0
Part no. : 0 460 414 121 Pump designation : VE4/11F1900R494-1	+ Tolerance bar + : 0.3
	+ Shutoff solenoid
	+ Volt : 12
Customer-spec. information	+
Customer : IVECO-SOFIM Motor : 8140.47.2585	FULL-LOAD DELIVERY WITH BOOST PRESSURE
Motor : 8140.47.2585	+
	Rated speed rpm : 1400
	Aneroid pressure
TEST BENCH REQUIREMENTS	+ hPa : 1000
	+ Del. quantity
Overflow	- cm3/1000 strokes : 56.0
restriction mm : 0.75	+ Tolerance
	+ cm3/1000 str. +-: 0.5
2.1.	+ Spread
Inlet press. bar : 0.35	+ cm3/1000 strokes : 4.0
Tolerance bar +-: 0.05	+ Check tolerance
	+ cm3/1000s. : 4.5
<b>T</b>	+ Shutoff solenoid
Test nozzle holde	+ Volt : 12
assembly : 1 688 901 027	FULL LOAD DELTH HITTHOUT BOOK BRECOURE
Onandar massum	+ FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Opening pressure	† Dated and an
bar : 250 Tolerance bar + : 3	+ Rated speed rpm : 550
toterance par += ; 3	+ Del. quantity + cm3/1000 strokes : 27.0
Test lines : 1 680 750 073	+ Tolerance + cm3/1000 str. +-: 0.5
rest times . 1 000 /30 0/3	+ Shutoff solenoid
Outside diameter : 6.00	+ Volt : 12
Vatarue drangter . V.UU	Check tolerance
x inside diameter : 2.00	- cm3/1000s. : 4.5
x length mm : 450	4.5
	I IDLE SETTING
	+
REMARKS	Rated speed rpm : 325
**	+ Del. quantity
	+ cm3/1000 strokes : 17.0
	Tolerance
	+  cm3/1000  str. + : 2.0
INJECTION PUMP SETTING VALUES	+ Shutoff solenoid
-	+ Volt : 12
TIMING DEVICE TRAVEL	+ Spread
	+ cm3/1000 strokes : 6.0
Rated speed rpm : 1200	+ Check tolerance
Aneroid pressure	+ cm3/1000s. : 6.5
hPa : 1000	+
	1

		† Shutoff solenoid	
FULL-LOAD SPEED RI	EGULATION	Volt :	12
Rated speed rpm Pressure hPa		JNJECTION-PUMP TEST	SPECIFICATIONS
Del. quantity cm3/1000 strokes	: 37.0	TIMING DEVICE CHARAC	TERISTIC
Tolerance cm3/1000 str. +-	: 3.0	Rated speed rpm : Aneroid pressure	1600
Shutoff solenoid Volt	: 12	hPa :	1000
STARTING FUEL DEL		SV travel mm : Tolerance mm +-:	4.3 0.4
0171117 101C DEL.	745//	+ Check	0.4
Rated speed rpm Del. quantity	: 100	tolerance mm +-: Shutoff solenoid	C.7
cm3/1000 strokes Tolerance	: 65.0	Volt :	12
cm3/1000 str. +- Shutoff solenoid	: 25.0	Rated speed rpm : Aneroid pressure	1100
Volt	: 12	hPa :	1000
		SV travel mm :	1.0
LOAD-DEPENDENT STA	ART OF DELIVERY	Tolerance mm +-:	0.4
SETTING	THE OF BELLVENI	tolerance mm + : Shutoff solenoid	0.7
DELIVERY DIFFEREN	CE	Volt :	12
Rated speed rpm Pressure hPa	: 1400 : 1000	Rated speed rpm : Aneroid pressure	1900
Del. quantity cm3/1000 strokes		hPa :	1000
Tolerance	-	SV travel mm :	4.9
cm3/1000 str. +- Shutoff solenoid		Tolerance mm + : Check	0.4
Volt	: 12	tolerance mm +: Shutoff solenoid	0.7
PRESSURE DIFFERENCE	CE	Volt :	12
Rated speed rpm Anercid pressure	: 1400	SUPPLY PUMP PRESSURE	CHARACTERISTIC
hPa Del. quantity	: 1000	Rated speed rpm : Aneroid pressure	1900
cm3/1000 strokes Tolerance	: -0.2	+ hPa :	1000
cm3/1000 str. +-	: 0.1	+ pressure bar :	8.5
Shutoff solenoid Volt	: 12	Tolerance bar + : Shutoff solenoid	0.3
TIMING-DEVICE TRAN	VEL DIFFERENCE	+ Volt :	12
Rated speed rpm	: 1400	+ Rated speed rpm : + Aneroid pressure	700
Aneroid pressure hPa	: 1000	+ hPa : + Supply pomp	1000
Del. quantity cm3/1000 strokes		pressure bar : Tolerance bar +:	4,1 0.3
Tolerance cm3/1000 str. +-		+ Shutoff solenoid + Volt :	12
CIID/ TOOU SET.	• 0.1	T 10(1	1 &

					Charle talanan		
OVERFLOW QUANTITY				Ī	Check tolerance cm3/1000s. +-		1.5
012///200 40////11/				1	Shutoff solenoid	•	1.5
Rated speed rpm	:	1900		+	Volt	:	12
Aneroid pressure				+			
hPa	:	1000		+	Rated speed rpm	:	700
Overflow quentity ccm/10s		138.8		†	Aneroid pressure		/00
Tolerance	•	130.0		Ī	hPa Del. quantity	:	400
ccm/10s +-	:	41.6		Ī	cm3/1000 strokes	•	44.0
				+	Tolerance	•	
Check tolerance				+	cm3/1000 str. +-	:	0.5
ccm/10s +	:	41.6		+	Check tolerance		
Shutoff solenoid Volt		12		†	cm3/1000S. +- Shutoff solenoid	:	4.0
VOCC	•	12		I	Volt		12
Rated speed rpm	:	700		1	1011	•	٦.
Aneroid pressure				+	Rated speed rpm	:	1900
hPa	:	1000		+	Aneroid pressure		
Overflow quantity		111.1		†	hPa	:	1000
ccm/10s Tolerance	:	111.1		Ī	Del. quantity cm3/1000 strokes		58.5
acm/10s +-	:	22.2		I	Tolerance	•	20.5
	•			+	cm3/1000 str. +-	:	2.5
Check tolerance				+	Check tolerance		
ccm/10s +	:	22.2		+	cm3/1000s. +-	:	3.5
Shutoff solenoid Volt		12		†	Shutoff solenoid Volt		12
VOLL	·	16		Ī	vott	:	12
DELIVERY AND BREAK	KAWA	Y CHARACT	TERISTIC	1	Rated speed rpm	:	1200
				+	Aneroid pressure		
Rated speed rpm	:	2100		+	hPa	:	1000
Aneroid pressure		1000		†	Del. quantity		<b>5</b> ( 3
hPa Del. quantity	:	1000		Ī	cm3/1000 strokes Tolerance	:	56.0
cm3/1000 strokes	:	37.0		I	cm3/1000 str. +-	•	2.5
Tolerance	•	• • • • • • • • • • • • • • • • • • • •		+	Check tolerance	•	
cm3/1000 str. +-	:	3.0		+	cm3/1000s. +-		4.0
Check tolerance				+	Shutoff solenoid		
cm3/1000S. +- Shutoff solenoid	:	4.5		†	Volt	:	12
Volt	•	12		I	Rated speed rpm	:	1750
VOCC	•	, _		1	Aneroid pressure	•	1120
Rated speed rpm	:	2200		+	hPa	:	1000
Aneroid pressure		4000		+	Del. quantity		
hPa	:	1000		†	cm3/1000 strokes	:	58.0
Del. quantity cm3/1000 strokes		18.0		İ	Tolerance cm3/1000 str. +-		2.5
Check tolerance	•	10.0		I	Check tolerance	•	2.5
cm3/1000s. +-	:	6.0		+	cm3/1000s. +-	:	3.5
Shutoff solenoid				+	Shutoff solenoid		
Volt	:	12		†	Volt	:	12
Dotad speed non		2280		İ	Datad apped non-		700
Rated speed rpm Aneroid pressure	:	620U		I	Rated speed rpm Aneroid pressure	:	700
hPa	:	1000		1	hPa	:	1000
Del. quantity				+	Del. quantity	-	
cm3/1000 strokes	:	1.5		+	cm3/1000 strokes	:	59.0
Tolerance		4 5		†	Tolerance	_	, -
cm3/1000 str. +-	:	1.5		+	cm3/1000 str. +-	:	4.5

		1		
Check tolerance cm3/1000S. +-: Shutoff solenoid	5.5	‡	Rated speed rpm Aneroid pressure	: 1400
Volt :	12		hPa	: 1000
Rated speed rpm : Aneroid pressure	1400	+	Del. quantity cm3/1000 strokes Tolerance	: -28.0
hPa :	1000	+	cm3/1000 str. +-	: 3.0
Del. quantity cm3/1000 strokes :	56.0	+	Check tolerance cm3/1000s. +-	: 4.0
	0.5		Shutoff solenoid Volt	: 12
check tolerance cm3/1000s. +-:	3.5	‡	TIMING-DEVICE TRAV	EL DIFFERENCE
Shutoff solenoid :	12	‡	Rated speed rpm	: 1400
		+	Aneroid pressure hPa	: 1909
ELECTR CHITOE		•	Del. quantity	
ELECTR. SHUTOFF CONTROL LEVER, IDLE	STOP		cm3/1000 strokes Tolerance	
Rated speed rpm :	325		cm3/1000 str. +- Check tolerance	: 0.1
Del. quantity cm3/1000 strokes :	1.5		cm3/1000s. +-: Shutoff solenoid	: 0.1
Tolerance cm3/1000 str. +-:	1.5		Volt	: 12
Check tolerance cm3/1030s. +-;	1.5	+	DELIVERY DIFFERENCE	<b>=</b>
			Rated speed rpm	: 1400
FULL-LOAD STOP CONTR		+	Aneroid pressure hPa	: 1000
Rated speed rpm : Del. quantity	325		Del. quantity cm3/1000 strokes	: 1.5
cm3/1000 strokes : Tolerance	1.5		Tolerance cm3/1000 str. +-	: 1.5
cm3/1000 str. +-: Check tolerance	1.5		Check tolerance cm3/1000s. +-	
cm3/1000s. +-:	1.5	· · · · · · · · · · · · · · · · · · ·	Shutoff solenoid	
IDLE DELIVERY		<del>}</del>	Volt	: 12
Rated speed rpm :	450	‡	TIMING-DEVICE TRAVE	EL DIFFERENCE
Del. quantity cm3/1000 strokes :	1.5		Rated speed rpm : Aneroid pressure	: 1400
Tolerance cm3/1000 str. +-:	1.5	+	hPa Tolerance mm +-:	: 1000 : 0.2
Check tolerance cm3/1000s. +-:	1.5	+	Check tolerance mm +-:	
Shutoff solenoid		+	Shutoff solenoid	
Volt :	12	‡	Volt :	: 12
		‡	START TRANSITION	
CUECKTAIC I AAA ACCELO	.FNT		Rated speed rpm	: 500
CHECKING LOAD-DEPEND START OF DELIVERY	icin i	+	Del. quantity cm3/1000 strokes	: 22.0
DELIVERY DIFFERENCE			Tolerance cm3/1000 str. +-:	: 8.0

Shutoff solenoid

12 Volt

Rated speed rpm : 200

Del. quantity cm3/1000 strokes : 80.0

Tolerance

cm3/1000 str. + : 25.0

Shutoff solenoid

Volt 12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm +:+0,1Dimension KF mm : 8,4 Tolerance mm +:+0,2

MS1 dimension mm : 1,7

Tolerance mm + : +0,15/-0,1

KSB travel mm : 7,0

# CONTROL LEVER POSITION

SET

Control lever

: 37,9..39,9 position YA mm

Control lever

position YB mm : 43,7..48,9

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 22.11.93 Test oil : ISO 4113 : 0 460 426 209 Part no. Pump designation : VE6/12F1200R496 Customer-spec. information Customer : MAN : D 0826 LF 07 Motor Power KW 140.0 TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C Tolerance °C +-: Overflow restriction mm : 0.55 Inlet press. bar : 0.35Tolerance bar +-: 0.05 Test nozzle holde : 1 688 901 110 assembly Opening pressure bar Tolerance bar +-: Test lines : 1 680 750 000 Outside diameter : 6.00 x inside diameter : 2.00 x length mm : 840 REMARKS

(as of UT) mm : 0.2+-: +-0,02 Tolerance mm Check tolerance mm +-:+-0.04INJECTION PUMP SETTING VALUES TIMING DEVICE TRAVEL Rated speed rpm 850 Aneroid pressure 1000 hPa Setting mm 2.2 Tolerance mm 0.2 SUPPLY PUMP PRESSURE Rated speed rpm : 850 Aneroid pressure hPa 1000 Supply pomp pressure bar Tolerance bar + : 0.3 FULL-LOAD DELIVERY WITH BOOST PRESSURE Rated speed rpm : 1000 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 92.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 FULL-LOAD DELIV. WITHOUT BOOST PRESSURE Rated speed rpm 500 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 str. +-:0.5 Check tolerance cm3/1000s. IDLE SETTING Rated speed rpm 250 Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 str. +-: 3.5 Spread

cm3/1000 strokes :

6.0

Prestroke

BEGINNING OF DELIVERY

Check tolerance + cm3/1000s. : 6.5	Aneroid pressure
cm3/1000s. : 6.5	hPa : 1000 Supply pomp
I	pressure bar : 5.8
1	Tolerance bar +-: 0.3
1	
FULL-LOAD SPEED REGULATION	OVERFLOW QUANTITY
t	
Rated speed rpm : 1280	Rated speed rpm : 500
Pressure hPa : 1000 +	Overflow quantity ccm/10s : 63.8
cm3/1000 strokes : 65.0	Tolerance : 63.6
Tolerance	ccm/10s +-: 22.2
cm3/1000 str. +: 3.0	
+	Check tolerance
STARTING FUEL DELIVERY	ccm/10s +-: 22.2
Ratted speed rpm : 100	Rated speed rpm : 1200
Ratted speed rpm : 100 + Del. quantity +	Rated speed rpm : 1200 Aneroid pressure
cm3/1000 strokes : 80.0	hPa : 1000
Tolerance	Overflow quantity
cm3/1000 str. + : 20.0	ccm/10s : 97.2
+	Tolerance
†	ccm/10s +-: 41.6
I	Check tolerance
	ccm/10s +-: 41.6
INJECTION-PUMP TEST SPECIFICATIONS	
+	DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHARACTERISTIC	2 A d and a 4200
+	Rated speed rpm : 1280
Rated speed rpm : 950	Aneroid pressure
+	Aneroid pressure hPa : 1000
Rated speed rpm : 950 Aneroid pressure hPa : 1000	Aneroid pressure
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm +: 0.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +-: 3.0
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm +: 0.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. +-: 3.0
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5 Rated speed rpm : 1450
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5 Rated speed rpm : 1450 Aneroid pressure
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5 Rated speed rpm : 1450 Aneroid pressure hPa : 1000
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5 Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity Aneroid pressure hPa : 1000 Del. quantity
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5  Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1000	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5 Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity Aneroid pressure hPa : 1000 Del. quantity
Rated speed rpm : 950  Aneroid pressure hPa : 1000  SV travel mm : 3.3  Tolerance mm +: 0.4 Check tolerance mm +: 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm +: 0.4 Check tolerance mm +: 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 9.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5  Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance
Rated speed rpm : 950  Aneroid pressure hPa : 1000  SV travel mm : 3.3  Tolerance mm +: 0.4 Check tolerance mm +: 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm +: 0.4 Check tolerance mm +: 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1000 Supply pomp	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5  Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
Rated speed rpm : 950 Aneroid pressure hPa : 1000  SV travel mm : 3.3 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 9.3 Tolerance bar + : 0.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5  Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Check tolerance cm3/1000s. + : 1.5
Rated speed rpm : 950  Aneroid pressure hPa : 1000  SV travel mm : 3.3  Tolerance mm +: 0.4 Check tolerance mm +: 0.7  Rated speed rpm : 750 Aneroid pressure hPa : 1000  SV travel mm : 1.0 Tolerance mm +: 0.4 Check tolerance mm +: 0.7  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1200 Aneroid pressure hPa : 1000 Supply pomp pressure bar : 9.3	Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 3.0 Check tolerance cm3/1000s. + : 4.5  Rated speed rpm : 1350 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Check tolerance cm3/1000s. + : 7.5  Rated speed rpm : 1450 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 7.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance

A		Annual di managarina
Aneroid pressure hPa :	1000	+ Aneroid pressure + hPa : 1000
hPa : Del. quantity	1000	+ hPa : 1000 + Del. quantity
cm3/1000 strokes :	48.0	- cm3/1000 strokes : 92.0
Tolerance	40.0	Tolerance
cm3/1000 str. +-:	18.0	- cm3/1000 str. +-: 0.5
Check tolerance	10.0	Check tolerance
cm3/1000s. +-:	18.0	7.440000
CIID/10003. 49:	10.0	+ cm3/100US. +-: 2.5
Rated speed rpm :	500	T
Rated speed rpm : Aneroid pressure	200	MECHANICAL SHUTOFF
hPa :	450	T HECHANICAL SHOTOFF
Del. quantity	470	Rated speed rpm : 1200
cm3/1000 strokes :	93.0	Aneroid pressure
Tolerance	75.0	+ hPa : 1000
cm3/1000 str. +-:	0.5	Del. quantity
Check tolerance	0.5	- cm3/1000 strokes : 1.5
cm3/1000s. +-:	2.5	Folerance
(1157 10500:	2.5	+ cm3/1000 str. +: 1.5
Rated speed rpm :	1200	Spread
Aneroid pressure		- cm3/1000 strokes : 5.0
hPa :	1000	- Check tolerance
Del. quentity		- cm3/1000s, +-: 1.5
cm3/1000 strokes :	89.4	Spread
Tolerance		+ cm3/1000 strokes : 5.0
cm3/1000 str. +-:	2.5	+
Check tolerance		+
cm3/1000s. + :	4.0	+
		† IDLE DELIVERY
Rated speed rpm :	600	+
Aneroid pressure		+ Rated speed rpm : 400
hPa :	1000	+ Del. quantity
Del. quantity	404.0	- cm3/1000 strokes : 1.5
cm3/1000 strokes :	101.0	† Tolerance
Tolerance	2.5	+ cm3/1600 str. +-: 1.5 + Check tolerance
cm3/1000 str. +-: Check tolerance	2.3	7.44000
cm3/1000s. +-:	4.0	+ cm3/100US. +-: 1.5
CM3/10003:	4.0	I
Rated speed rpm :	800	1
Aneroid pressure	000	<u> </u>
hPa :	1000	1
Del. quantity		+
cm3/1000 strokes :	94.6	+ START TRANSITION
Tolerance	<del>-</del>	+
cm3/1000 str. +-:	2.5	Rated speed rpm : 430
Check tolerance		+ Del. quantity
cm3/1000s. +-:	4.0	+ cm3/1000 strokes : 55.0
		† Tolerance
Rated speed rpm :	500	+ cm3/1000 str. +-: 15.0
Aneroid pressure		†
hPa :	1000	† Dated and day
Del. quantity	407 7	+ Rated speed rpm : 330
cm3/1000 strokes :	106.6	+ Del. quantity
Tolerance	4.5	+ cm3/1000 strokes : 85.0 + Tolerance
cm3/1000 str. +-: Check tolerance	4.)	+ cm3/1000 str. +-: 15.0
cm3/1000s. +-:	6.0	T CIRCY 1000 SCI . TT ; 13.0
CR3/10003. F-:	0.0	
Rated speed rpm :	1000	ASSEMBLY AND ADJUSTMENT DIMENSIONS
THE TOTAL PRINT I		1 - Comment of the control of the particular of the control of the

Dimension KF mm : 6,0
Tolerance mm + : +-0,2
Dimension MS mm : 1,1
Tolerance mm + : +-0,2

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.06.95 Edition : ISO 4113 Test oil

: 0 460 426 244 Part no. Pump designation: VE6/12F125DR498-3

Customer-spec. information : CDC Customer

Motor : 6 BT 5.9B

### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C +-:

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar :-: 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

207 Tolerance bar +-:

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

### **REMARKS**

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,2 Tolerance mm + : + 0.02Outlet

# INJECTION PUMP SETTING VALUES

### TIMING DEVICE TRAVEL

Rated speed rpm : 900 Aneroid pressure

hPa 1000

Setting mm 1.7 Tolerance mm +-: 0.2 Shutoff solenoid Volt 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900

Aneroid pressure

hPa 1000

Supply pomp

pressure bar 6.2 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 24

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850 Aneroid pressure

hPa

1000 Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 str. +-: 0.5 Spread

cm3/1000 strokes :

5.0 Check tolerance cm3/1000s. 5.0

Shutoff solenoid

Volt 24

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 61.0

Tolerance

cm3/1000 str. + : 0.5Spread

cm3/1000 strokes : 5.0 Shutoff solenoid

Volt

24 Check tolerance 6.0

cm3/1000s. Check tolerance cm3/1000s.

5.0

IDLE SETTING			†	Aneroid pressure		1000
			Ţ	Shutoff solenoid	•	1000
Rated speed rpm Del. quantity	:	350	‡	Volt	:	24
cm3/1000 strokes Tolerance	:	13.0	+	Rated speed rpm	:	450
cm3/1000 str. +-	:	2.0	+	SV travel mm	:	2.5
Shutoff solenoid Volt	:	24	Ŧ	Tolerance mm +- Check	•	0.5
Spread cm3/1000 strokes	:	5.5	‡	tolerance mm +- Shutoff solenoid	:	0.7
Check tolerance cm3/1000s.	:	7.0	‡	Volt	:	24
			<u> </u>	KSB/AFB Volt	:	24
			+	Rated speed rpm Aneroid pressure	:	800
FULL-LOAD SPEED RE	EGULAT	ION	<u> </u>	hPa	:	1000
Rated speed rpm		350	+	SV travel mm	:	1.3
Pressure hPa	:	1000	+	Tolerance mm +	:	0.4
Del. quantity cm3/1000 strokes	•	54.0	Ī	Check tolerance mm +-		0.7
Tolerance			+	Shutoff solenoid	•	<b>5.</b> 1
cm3/1000 str. +- Shutoff solenoid	:	3.0	‡	Volt	:	24
Volt	:	24	+	SUPPLY PUMP PRESSU	JRE	CHARACTERISTIC
STARTING FUEL DEL	IVERY		<u> </u>	Rated speed rpm Aneroid pressure	:	1250
Rated speed rpm Del. quantity	:	100	Ì	hPa Supply pomp	:	1000
cm3/1000 strokes	:	80.0	Ţ	pressure bar	:	7.5
Tolerance			+	Tolerance bar +-	:	0.3
cm3/1000 str. +- Shutoff solenoid	:	20.0	†	Shutoff solenoid Volt		2/
Volt	:	24	I	VOLL	•	24
	·		1	Rated speed rpm Aneroid pressure	:	800
			Ì	hPa Supply pomp	:	1000
		<del></del>	Ţ	pressure bar	:	5.7
INJECTION-PUMP TES	ST SPE	CIFICATIONS	+	Tolerance bar +-	:	0.3
TIMING DEVICE CHAP	RACTER	ISTIC	Ŧ	Shutoff solenoid Volt	:	24
Rated speed rpm	: 1	250	Ī	Rated speed rpm		500
Aneroid pressure	• '		+	Aneroid pressure	•	
hPa	:	1000	‡	hPa Supply pomp	:	1000
SV travel mm	:	2.6	+	pressure bar	:	4.2
Tolerance mm +- Check	:	0.4	‡	Tolerance bar +- Shutoff solenoid	:	0.3
tolerance mm +-	:	0.7	+	Volt	:	24
Shutoff solenoid Volt	:	24	Ŧ	OVERFLOW QUANTITY		
Rated speed rpm	: 3	500	‡	Rated speed rpm	•	500

Overflow quantity ccm/10s : 63.8	+ Aneroid pressure + hPa : 450
Tolerance ccm/10s +-: 22.2	+ Del. quantity + cm3/1000 strokes : 72.0
Check tolerance ccm/10s +-: 22.2	+ Tolerance + cm3/1000 str. + : 0.5
Shutoff solenoid Volt : 24	+ Check tolerance + cm3/1000s. +-: 4.0 + Shutoff solenoid
	Volt : 24
Rated speed rpm : 1250 Ameroid pressure hPa : 1000	Rated speed rpm : 1250
Overflow quantity ccm/10s : 97.2	+ Aneroid pressure + hPa : 1000
Tolerance + : 41.6	+ Del. quantity + cm3/1000 strokes : 82.0
	+ Tolerance + cm3/1000 str. → : 2.0
Check tolerance ccm/10s + : 41.6 Shutoff solenoid	+ Check tolerance + cm3/1000S. +-: 3.0 + Shutoff solenoid
Volt : 24	Volt : 24
DELIVERY AND BREAKAWAY CHARACTERISTIC	Rated speed rpm : 1100 Aneroid pressure
Rated speed rpm : 1350 Aneroid pressure	+ hPa : 1000 + Del. quantity
hPa : 1909 Del. quantity	cm3/1000 strokes : 85.0
cm3/1000 strokes : 54.0 Tolerance	- cm3/1000 str. + : 1.5 - Check tolerance
cm3/1000 str. +-: 3.0 Check tolerance	+ cm3/1000s. +-: 3.5 + Shutoff solenoid
cm3/1000s.   → : 8.0 Shutoff solenoid	Volt : 24
Volt : 24	Rated speed rpm : 850 Aneroid pressure
Rated speed rpm : 1425 Ameroid pressure	+ hPa : 1000 + Del. quantity
hPa : 1000 Del. quantity	cm3/1000 strokes : 85.0 Tolerance
cm3/1000 strokes : 25.0 Check tolerance	+ cm3/1000 str. +-: 0.5 + Check tolerance
cm3/1000s. +: 15.0 Shutoff solenoid	+ cm3/1000s. + : 3.0 + Shutoff solenoid
Volt : 24	+ Volt : 24
Rated speed rpm : 1480 Aneroid pressure	MECHANICAL SHUTOFF
hPa : 1000 Del. quantity	+ Rated speed rpm : 1250
cm3/1000 strokes : 1.5 Tolerance	+ Aneroid pressure + hPa : 1000
cm3/1000 str. +-: 1.5 Check tolerance	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000s. +-: 1.5 Shutoff solenoid	+ Tolerance + cm3/1000 str. +-: 1.5
Volt : 24	+ Check tolerance + cm3/1000s. +-: 1.5
Rated speed rpm : 650	+

Shutoff solenoid Volt	:	24	
ELECTR. SHUTOFF CONTROL LEVER, IDL	E S1	ГОР	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	350	
	:	1.5	
cm3/1000 str. +- Check tolerance	:	1.5	
cm3/1000s. +-	:	1.5	
FULL-LOAD STOP CON	NTROL	LEVER	
Rated speed rpm Del. quantity cm3/1000 strokes	:	350	
	:	1.5	
IDLE DELIVERY			
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	410	
		1.5	
	:	1.5	
	:	1.5	
Volt	:	24	
START TRANSITION			
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	:	210	
	:	75.0	
	:	20.0	
	:	24	
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + Shutoff solenoid Volt	:	130	
	:	95.0	
	:	20.0	
	:	24	

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +-0,1
Dimension KF mm : 6,4
Tolerance mm + : +-0,2
MS1 dimension mm : 1,36
Tolerance mm + : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control Lever

position YB mm : 43,6..48,8

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28,02,96 Edition Test oil : ISO 4113

Part no. : 0 460 426 245 Pump designation: VE6/12F1250R498-4

Customer-spec. information Customer : CDC

Motor : 6 BT 5.9B

# TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C +-:

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar 207 Tolerance bar +-:

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,4 Tolerance mm +-:+0.02Outlet | : D

### INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm 900 Aneroid pressure

1000

Setting mm 1.4 Tolerance mm +-: 0.2 Shutoff solenoid

Volt

### SUPPLY PUMP PRESSURE

Rated speed rpm : 900 Aneroid pressure

hPa 1000

Supply pomp

pressure bar 6.2 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 24

### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s.5.0

Shutoff solenoid

Volt 24

### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes :

69.5 Tolerance

cm3/1000 str. +-:

Spread cm3/1000 strokes : 5.0

Shutoff solenoid Volt

24 Check tolerance cm3/1000s. 6.0

Check tolerance cm3/1000s.

5.0

0.5

IDLE SETTING		+ Aneroid pressure + hPa : 1000
Rated speed rpm Del. quantity	: 330	Shutoff solenoid Volt : 24
cm3/1000 strokes Tolerance	: 9.0	Rated speed rpm : 450
cm3/1000 str. +- Shutoff solenoid		SV travel mm : 2.5 Tolerance mm + : 0.5
Volt Spread	: 24	+ Check + tolerance mm + : 0.7
cm3/1000 strokes Check tolerance	: 5.5	+ Shutoff solenoid + Volt : 24
cm3/1000s.	: 7.0	+ KSB/AFB Volt : 24
		Rated speed rpm : 800 Aneroid pressure
FULL-LOAD SPEED RI	EGULATION	hPa : 1000
Rated speed rpm Pressure hPa Del. quantity	: 1380 : 1000	SV travel mm : 1.0  Tolerance mm +: 0.4  Check
cm3/1000 strokes Tolerance	: 63.0	tolerance mm +: 0.7 Shutoff solenoid
cm3/1000 str. +- Shutoff solenoid	: 3.0	+ Volt : 24
Volt	: 24	SUPPLY PUMP PRESSURE CHARACTERISTIC
STARTING FUEL DEL	IVERY	+ Rated speed rpm : 1250 + Aneroid pressure
Rated speed rpm Del. quantity	: 100	+ hPa : 1000 + Supply pomp
cm3/1000 strokes Tolerance		+ pressure bar : 7.5 + Tolerance bar + : 0.3
cm3/1000 str. +- Shutoff solenoid		+ Shutoff solenoid + Volt : 24
Volt	: 24	+ Rated speed rpm : 800 + Aneroid pressure
		+ hPa : 1000 + Supply pomp
INJECTION-PUMP TE	ST SPECIFICATIONS	+ pressure bar : 5.7 + Tolerance bar +-: 0.3
TIMING DEVICE CHAP	RACTERISTIC	+ Shutoff solenoid + Volt : 24
Rated speed rpm Aneroid pressure hPa	: 1250	Rated speed rpm : 500
	: 1000	+ Aneroid pressure + hPa : 1000
SV travel mm Tolerance mm +-	: 2.8 : 0.4	+ Supply pomp + pressure bar : 4.2 + Tolerance bar +-: 0.3
Check tolerance mm +	: 0.7	Shutoff solenoid Volt : 24
Shutoff solenoid Volt	: 24	OVERFLOW QUANTITY
		1

Rated speed rpm : 500

Rated speed rpm : 500

Overflow quantity ccm/10s	: 72.2	#	- Aneroid pressure - hPa	:	450
Tolerance ccm/10s +-	: 22.2	. †	- LDA/		7.0
Check tolerance		1	- HBA stroke mm - Del. quantity	:	7.0
ccm/10s +- Shutoff solenoid	: 22.2	1	- cm3/1000 strokes - Tolerance	:	84.0
Volt	: 24		- cm3/1000 str. +- - Check tolerance	:	0.5
Rated speed rpm Aneroid pressure	: 1250		- cm3/1000s. + Shutoff solenoid	:	4.0
hPa Overflow quantity	: 1000	1	- Volt	:	24
ccm/10s Tolerance	: 88.8	1	- Rated speed rpm - Aneroid pressure	:	1250
ccm/10s +	: 27.7		- hPa - Del. quantity	:	1000
Check tolerance	: 27.7	Ţ	- cm3/1000 strokes - Tolerance	:	86.0
Shutoff solenoid	: 24	1	- cm3/1000 str. +- - Check tolerance	:	2.5
		TC010710	- c <b>m</b> 3/1000s. +	:	3.0
DELIVERY AND BREA	KAWAT CHARAC	IEKISIIC +	- Shutoff solenoid - Volt	:	24
Rated speed rpm Aneroid pressure	: 1380	1	- - Rated speed rpm	:	900
hPa Del. quantity	: 1000	1	- Aneroid pressure - hPa	•	1000
cm3/1000 strokes Tolerance	: 63.0	+	Del. quantity cm3/1000 strokes	•	83.5
cm3/1000 str. +- Check tolerance	: 3.0	+	- Tolerance - cm3/1000 str. +-		2.5
cm3/1000s. +- Shutoff solenoid	: 8.0	+	- Shutoff solenoid - Volt		24
Volt	: 24	1	Rated speed rpm	:	1100
Rated speed rpm Aneroid pressure	: 1430	1	- Aneroid pressure - hPa	•	1000
hPa Del. quantity	: 1000	1	Del. quantity cm3/1000 strokes	•	85.5
	: 30.0		Tolerance cm3/1000 str. +-		2.5
cm3/1909S. +- Shutoff solenoid	: 15.0	$\frac{1}{1}$	Check tolerance cm3/1000s.		3.5
Volt	: 24	1	Shutoff solenoid Volt	•	24
Rated speed rpm	: 1490	Ŧ	-	•	
Aneroid pressure hPa	: 1000	Ŧ	<ul> <li>Rated speed rpm</li> <li>Aneroid pressure</li> </ul>	•	850
Del. quantity cm3/1000 strokes	: 1.5	1	- hPa - Del. quantity	:	1000
Tolerance cm3/1000 str. +-	: 1.5	†	cm3/1000 strokes Tolerance	:	83.0
Check tolerance cm3/1000s. +-	: 1.5	1	cm3/1000 str. +- Check tolerance	:	0.5
Shutoff solenoid Volt	: 24	1	cm3/1000s. +- Shutoff solenoid	:	3.0
Rated speed rpm	: 600	1	· Volt	:	24
		1			

	+
MECHANICAL SHUTOFF	+
Rated speed rpm : 1250 Aneroid pressure	+ + START TRANSITION
hPa : 1000 Del. quantity	+
cm3/1000 strokes : 1.5 Tolerance	+ Rated speed rpm : 240 + Del. quantity
cm3/1000 str. +-: 1.5	+ cm3/1000 strokes : 78.0 + Tolerance
Spread cm3/1000 strokes : 5.0	+ cm3/1000 str. + : 10.0 + Shutoff solenoid
Check tolerance cm3/1000s. +-: 1.5 Spread	+ Volt : 24
cm3/1000 strokes : 5.0 Shutoff solenoid	Rated speed rpm : 130 Del. quantity
Volt : 24	+ cm3/1000 strokes : 130.0 + Tolerance
ELECTR. SHUTOFF	+ cm3/1000 str. +-: 20.0 + Shutoff solenoid
CONTROL LEVER, IDLE STOP	+ Volt : 24
Rated speed rpm : 350 Del. quantity	+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes : 1.5 Tolerance	+
cm3/1000 str. +- : 1.5 Check tolerance	+ LDA/ + HBA stroke mm : 7.0
cm3/1000s. +: 1.5 Spread	+ Dimension K mm : 3,7 + Tolerance mm + : +-0,1
cm3/1090 strokes : 5.0	+ Dimension KF mm : 6,4 + Tolerance mm +-: +-0,2
FULL-LOAD STOP CONTROL LEVER	+ MS1 dimension mm : 1,1 + Tolerance mm +- : +0,15/-0,1
Rated speed rpm : 350 Del. quantity	‡
cm3/1000 strokes : 1.5 Tolerance	CONTROL LEVER POSITION
cm3/1000 str. +-: 1.5 Spread	+ SET +
cm3/1000 strokes : 5.0 Check tolerance	Control lever
cm3/1000s. +-: 1.5 Spread	+ position YA mm : 34,838,8 +
cm3/1000 strokes : 5.0	+ Control lever + position YB mm : 45,350,5
IDLE DELIVERY	‡
Rated speed rpm : 390 Del. quantity	
cm3/1000 strokes : 1.5 Tolerance	+ End of test-specification sheet +
cm3/1000 str. +-: 1.5 Check tolerance	‡
cm3/1000s. + : 1.5 Shutoff solenoid	‡
Volt : 24	‡

BOSCH INJ. PUMP TE	EST SPECIFICATIONS				
Note remarks					
adjustment instruc	Refer to Service Info for test and adjustment instructions. See microcard(s) W400/				
Edition Test oil	: 22.02.96 : ISO 4113				
Part no. Pump designation	: 0 460 426 249 : VE6/12F1250R498-6				
Customer-spec. inf Customer Motor Power KW	formation : CUMMINS : 6 BTAA 5.9B : 133.0				
TEST BENCH REQUIRE	EMENTS				
Calibrating—oil return temperature °C +	: 45 : 1				
Overflow restriction mm	: 0.55				
Inlet press. bar Tolerance bar +-	: 0.35 : 0.05				
Test nozzle holde assembly	: 1 688 901 109				
Opening pressure bar Tolerance bar +-	: 207 : 3				
Test lines	: 1 680 750 000				
Outside diameter	: 6.00				
x inside diameter x length mm	: 2.00 : 840				
REMARKS					

Plunger stroke mm Tolerance mm +- Outlet				
INJECTION PUMP SE	FITING VALUES			
TIMING DEVICE TRA	AVEL			
Rated speed rpm Aneroid pressure	: 850			
hPa	: 1000			
Setting mm Tolerance mm +	: 1.5 -: 0.2			
Shutoff solenoid	: 12			
SUPPLY PUMP PRESS				
Rated speed rpm	: 850			
Aneroid pressure hPa	: 1000			
Supply pomp pressure bar	: 5.8			
Tolerance bar +- Shutoff solenoid	-: 0.3			
Volt	: 12			
FULL-LOAD DELIVERY WITH BOOST PRESSURE				
Rated speed rpm Aneroid pressure	: 850			
hPa Del. quantity	: 1000			
cm3/1000 strokes Tolerance	: 86.5			
cm3/1000 str. +- Spread	-: 0.5			
cm3/1000 strokes Check tolerance	: 5.0			
cm3/1000s. Shutoff solenoid	: 5.0			
Volt	: 12			
FULL-LOAD DELIV.	WITHOUT BOOST PRESSURE			
Rated speed rpm Del. quantity	: 500			
cm3/1000 strokes Tolerance	: 60.0			
cm3/1000 str. +- Spread	-: 0.5			
cm3/1000 strokes Shutoff solenoid	: 5.0			
Volt Check tolerance	: 12			
cm3/1000s.	: 6.0			

BEGINNING OF DELIVERY

art of delivery blocking

Check tolerance cm3/1000S.	: 5.0	Rated speed rpm : 750 Aneroid pressure
IDLE SETTING		+ hPa : 1000
Dahad assaul	. 750	+ SV travel mm : 0.7
Rated speed rpm Del. quantity		+ Tolerance mm +-: 0.4 + Check
cm3/1000 strokes Tolerance	: 15.0	+ tolerance mm + : 0.7 + Shutoff solenoid
cm3/1000 str. +- Shutoff solenoid	: 2.0	+ Volt : 12
Volt	: 12	Rated speed rpm : 450
Spread cm3/1000 strokes	: 5.5	SV travel mm : 2.4
Check tolerance	. 5.5	1
cm3/1000S.	: 7.0	
CHIS/ 10005.	. 7.0	+ Check + tolerance mm +-: 0.7
		+ Shutoff solenoid + Volt : 12
		+
FULL-LOAD SPEED R	EGULATION	+ KSB/AFB Volt : 12
Rated speed rpm	: 1380	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Pressure hPa	: 1000	+ '
Del. quantity		+ Rated speed rpm : 1250
cm3/1000 strokes	: 68.5	+ Aneroid pressure
Tolerance		+         hPa         :         1000
cm3/1000 str. +-	: 3.0	+ Supply pomp
Shutoff solenoid		pressure bar : 7.2
Volt	: 12	† Tolerance bar + : 0.3
		+ Shutoff solenoid
STARTING FUEL DEL	IVERY	† Volt : 12
Rated speed rpm Del. quantity	: 100	Rated speed rpm : 750 Aneroid pressure
cm3/1000 strokes	: 95.0	+ hPa : 1000
Tolerance	. ,,,,,	+ Supply pomp
cm3/1000 str. +	: 15.0	pressure bar : 5.4
Shutoff solenoid		+ Tolerance bar +-: 0.3
Volt	: 12	+ Shutoff solenoid
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		+ Volt : 12
		+
		Rated speed rpm : 500 Aneroid pressure
		+ hPa : 1000
INJECTION-PUMP TE	ST SPECIFICATIONS	+ Supply pomp
		+ pressure bar : 4.2
TIMING DEVICE CHAP	RACTERISTIC	† Tolerance bar +-: 0.3
		† Shutoff solenoid
Rated speed rpm	: 1250	† Volt : 12
Aneroid pressure hPa	: 1000	+ OVERFLOW QUANTITY
IIFa	. 1000	- OVERTEON GOANTITT
SV travel mm	: 2.4	Rated speed rpm : 500
Tolerance mm +-	: 0.4	+ Overflow quantity
Check		+ ccm/10s : 63.8
tolerance mm +-	: 0.7	+ Tolerance
Shutoff solenoid		+ ccm/10s + : 22.2
Volt	: 12	+
		+

Check_tolerance	‡	Tolerance cm3/1000 str. +-:	0.5
ccm/10s + : 22.2 Shutoff solenoid	‡	Check tolerance cm3/1000s. +-:	4.0
Volt : 12	‡	Shutoff solenoid Volt :	12
Rated speed rpm : 1250 Aneroid pressure	‡	Rated speed rpm :	1250
hPa : 1000 Overflow quantity	1	Aneroid pressure hPa :	1000
ccm/10s : 83.3 Tolerance	<u> </u>	Del. quantity cm3/1000 strokes :	85.5
ccm/10s + : 27.7	1	Tolerance cm3/1000 str. +-:	1.5
Check tolerance ccm/10s +: 27.7	<u> </u>	Check tolerance cm3/1000s. +:	3.5
Shutoff solenoid Volt : 12	· -	Shutoff solenoid	12
	7016716		
DELIVERY AND BREAKAWAY CHARACTE	± 1011C	Rated speed rpm : Aneroid pressure	1100
Rated speed rpm : 1380 Aneroid pressure	‡	hPa : Del. quantity	1000
hPa : 1000 Del. quantity	‡	cm3/1000 strokes : Tolerance	88.0
cm3/1000 strokes : 68.5 Tolerance	‡	cm3/1000 str. + : Check tolerance	1.5
cm3/1000 str. + : 3.0 Check tolerance	† †	cm3/1000S. + : Shutoff solenoid	3.5
cm3/1000s. +-: 6.0 Shutoff solenoid	<del>†</del>	Volt :	12
Volt : 12	‡	Rated speed rpm : Aneroid pressure	850
Rated speed rpm : 1465 Aneroid pressure	<u> </u>	ክPa : Del. quantity	1000
hPa : 1000 Del. quantity	<u> </u>	cm3/1000 strokes : Tolerance	86.5
cm3/1000 strokes : 27.5 Check tolerance	1	cm3/1000 str. +-:	0.5
cm3/1000s. + : 10.0 Shutoff solenoid	<u> </u>	cm3/1000s. +-: Shutoff solenoid	3.0
Volt : 12	1	Volt :	12
Rated speed rpm : 1530 Aneroid pressure	$\frac{1}{1}$	MECHANICAL SHUTOFF	
hPa : 1000 Del. quantity	1	Rated speed rpm :	1250
cm3/1000 strokes : 1.5	Ŧ	Aneroid pressure	1000
Tolerance cm3/1000 str. +-: 1.5	Ŧ	Del. quantity	
Check tolerance cm3/1000s. +-: 1.5	Ŧ	cm3/1000 strokes : Tolerance	1.5
Shutoff solenoid Volt : 12	‡	cm3/1000 str. +-: Spread	1.5
Rated speed rpm : 600	‡	cm3/1000 strokes : Check tolerance	5.0
Aneroid pressure hPa : 500	‡	cm3/1000s. +-: Spread	1.5
Del. quantity cm3/1000 strokes : 78.5	‡	cm3/1000 strokes :	5.0

K04

Shutoff solenoid Volt	:	12	
ELECTR. SHUTOFF CONTROL LEVER, ID	IF S	700	<u></u>
Rated speed rpm Del. quantity	:	350	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 str. +-	:	1.5	
Check tolerance cm3/1000s. +-	. •	1.5	
Spread	•		
cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CO	NTRO	L LEVER	
Rated speed rpm	:	350	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 str. +-	. •	1.5	
Spread	•		
cm3/1000 strokes Check tolerance	:	5.0	
cm3/1000s. +-	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
Rated speed rpm	:	410	
Del. quantity		· · · <del>-</del>	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +	:	1.5	
Check tolerance cm3/1000s. +-	:	1.5	
Shutoff solenoid	•	12	
Volt	•	14	
START TRANSITION			
Rated speed rpm	:	240	
Del. quantity cm3/1000 strokes	:	70.0	
Tolerance			
cm3/1000 str. +- Shutoff solenoid	:	15.0	
Volt	:	12	
		4	
Rated speed rpm	:	130	

Del. quantity
cm3/1000 strokes : 100.0
Tolerance
cm3/1000 str. +- : 20.0
Shutoff solenoid
Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm + : +0,1
Dimension KF mm : 6,4
Tolerance mm + : +0,2
MS1 dimension mm : 1,3
Tolerance mm + : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 41,7..48,3

End of test-specification sheet

K05

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.11.95 Test oil : ISO 4113

Part no. : 0 460 494 390 Pump designation : VE4/9F2100R508-1

Customer-spec. information
Customer : FIAT-AUTO
Motor : M710 HT19.D
Power KW : 66.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Setting mm : 2.8
Tolerance mm + : 0.1

Shutoff solenoid Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 4.8
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1500 Aneroid pressure 1000 Del. quantity cm3/1000 strokes : 52.0 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s.2.5 Shutoff solenoid Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 40.5
Tolerance
cm3/1000 str. + : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 2.5

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 4.5
Tolerance
cm3/1000 str. +- : 1.0

Shutoff solenoid Volt : 12	- Shutoff solenoid - Volt : 12
IDLE DELIVERY	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 450 Del. quantity	- Rated speed rpm : 1500 - Del. quantity
cm3/1000 strokes : 14.0 Tolerance	- cm3/1000 strokes : -0.8 - Tolerance
cm3/1000 str. + : 2.0	- cm3/1000 str. +-: 0.1 - Shutoff solenoid
cm3/1000 strokes : 2.5 Shutoff solenoid	- Volt : 12 -
Volt : 12	- INJECTION-PUMP TEST SPECIFICATIONS
FULL-LOAD SPEED REGULATION	TIMING DEVICE CHARACTERISTIC
Rated speed rpm : 2400 Pressure hPa : 1000	- Rated speed rpm : 2100 - Aneroid pressure
Del. quantity cm3/1000 strokes : 26.0	- hPa : 1000
Tolerance cm3/1000 str. + : 3.0	- SV travel mm : 8.2 - Tolerance mm +-: 0.3
Shutoff solenoid Volt : 12	- Check - tolerance mm + : 0.7
STARTING FUEL DELIVERY	- Shutoff solenoid - Volt : 12
Rated speed rpm : 100 Del. quantity	- Rated speed rpm : 1500 - Aneroid pressure
cm3/1000 strokes : 65.0	- hPa : 1000
cm3/1000 str. +-: 15.0 + Shutoff solenoid +	- SV travel mm : 5.4 - Tolerance mm +-: 0.3
Volt : 12 +	- Check - tolerance mm + : 0.7
LOAD-DEPENDENT START OF DELIVERY	- Shutoff solenoid - Volt : 12
SETTING	SUPPLY PUMP PRESSURE CHARACTERISTIC
DELIVERY DIFFERENCE	- Rated speed rpm : 2100 - Aneroid pressure
Rated speed rpm : 1500  Del. quantity	- hPa : 1000 - Supply pomp
cm3/1000 strokes : -10.0 + Tolerance cm3/1000 str. +- : 1.0 + Tolerance cm3/1000 str. +- : 1.0	- pressure bar : 7.8 - Tolerance bar +-: 0.3 - Shutoff solenoid
Shutoff solenoid Volt : 12	- Volt : 12
PRESSURE DIFFERENCE	- Rated speed rpm : 1500 - Aneroid pressure
Rated speed rpm : 1500 +	- hPa : 1000 - Supply pomp
Del. quantity cm3/1000 strokes : -0.2	pressure bar : 6.2 Tolerance bar + : 0.3
Tolerance cm3/1000 str. +-: 0.1	- Shutoff solenoid - Volt : 12 -

		l glavess l	• •	
OVERFLOW QUANTITY		+ Shutoff solen + Volt	51d .	12
01E/(/ COW		1	•	16
Rated speed rpm	: 2100	Rated speed r		750
Aneroid pressure hPa	: 1600	+ Aneroid press + hPa	ure .	450
Overflow quantity		I nra	•	4.50
ccm/10s	: 152.7	↓ LDA/		
Tolerance		+ HBA stroke mm		6.7
ccm/10s +-	: 41.6	Del. quantity	1	/-> -
Check tolerance		+ cm3/1000 stro + Tolerance	kes :	47.5
ccm/10s +-	: 41.6	cm3/1000 str.	+-:	0.5
Shutoff solenoid	• -	+ Check toleran	ce	
Volt	: 12	+ cm3/1000s.	+-:	2.5
Rated speed rpm	: 750	+ Shutoff solen + Volt	οια •	12
Aneroid pressure	. 750	1 ,000	•	12
hPa	: 1000	+ Rated speed r	om :	2100
Overflow quantity		+ Aneroid press	ure	4000
ccm/10s Tolerance	: 111.1	+ hPa + Del. quantity	:	1000
ccm/10s +-	: 22.2	cm3/1000 stro	kes :	51.5
		+ Tolerance		
Check tolerance	: 22.2	+ cm3/1000 str.		1.5
ccm/10s +- Shutoff solenoid	. 22.2	+ Check toleran + cm3/1000s.	ce +- :	2.5
Volt	: 12	+ Shutoff solen	•	2.5
		+ Volt	:	12
DELIVERY AND BREA	KAWAY CHARAI	•		750
Rated speed rpm	: 2400	+ Rated speed r		750
Aneroid pressure	. 2100	+ cm3/1000 stroi		41.0
hPa	: 1000	+ Tolerance		
Del. quantity	: 26.0	+ cm3/1000 str.		1.0
cm3/1000 strokes Tolerance	: 26.0	+ Shutoff solen + Volt	31a •	12
cm3/1000 str. +-	: 3.0	1	•	12
Check tolerance		+ Rated speed r		750
cm3/1000s. +-	: 5.0	+ Aneroid press	ure	4000
Shutoff solenoid Volt	: 12	+ hPa + Del. quantity	•	1000
1011	•	+ cm3/1000 strol		54.0
Rated speed rpm	: 2700	+ Tolerance		
Aneroid pressure hPa	: 1000	+ cm3/1000 str. + Check toleran		1.5
Del. quantity	. 1000	- check toteran	÷- :	2.5
cm3/1000 strokes	: 3.5	+ Shutoff solen	oid	
Shutoff solenoid	40	+ Volt	:	12
Volt	: 12	+ Rated speed r		1500
Rated speed rpm	: 2500	Aneroid pressi		1000
Aneroid pressure		∔ hPa	:	1000
hPa	: 1000	Del. quantity		50.0
Del. quantity cm3/1000 strokes	: 15.0	+ cm3/1000 stroi	kes :	52.0
Tolerance	. 15.0	cm3/1000 str.	+- :	0.5
cm3/1000 str. +-	: 4.0	+ Check tolerand		
Check tolerance		+ cm3/1000s.	+-:	2.0
cm3/1000s. +-	: 5.0	+		

Shutoff solenoid Volt : 12	<u> </u>
	CHECKING LOAD-DEPENDENT START OF DELIVERY
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	DELIVERY DIFFERENCE
Rated speed rpm : 450	Rated speed rpm : 1500 Del. quantity
Del. quantity cm3/1000 strokes : 1.5	- cm3/1000 strokes : -12.0 - Tolerance
Tolerance cm3/1000 str. +-: 1.5	- cm3/1000 str. +-: 4.0 - Check tolerance
Check tolerance cm3/1000s. + : 1.5	cm3/1000s. +-: 4.0  Shutoff solenoid
Spread 5.0	Volt : 12
FULL-LOAD STOP CONTROL LEVER	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 450	Rated speed rpm : 1500 Del. quantity
Del. quantity cm3/1000 strokes : 1.5	- Del. quantity - cm3/1000 strokes : -0.8 - Tolerance
Tolerance cm3/1000 str. + : 1.5	- cm3/1000 str. + : 0.1 - Check tolerance
Spread cm3/1000 strokes : 5.0	+ cm3/1000s. $+$ : 0.1
Check tolerance	+ Shutoff solenoid + Volt : 12
Spread	DELIVERY DIFFERENCE
cm3/1000 strokes : 5.0	Rated speed rpm : 1500
	- cm3/1000 strokes : 5.0 Tolerance
RESIDUAL QUANTITY	- cm3/1000 str. +-: 1.0 - Check tolerance
Rated speed rpm : 600 Del. quantity	cm3/1000s. + : 1.0 Shutoff solenoid
cm3/1000 strokes : 5.5 Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.5 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	Rated speed rpm : 1500 Tolerance mm +-: 0.3
IDLE DELIVERY	+ Check + tolerance mm +-: 0.4
Rated speed rpm : 500	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes : 7.0 Tolerance	EVHALIST_CAS DECEDENT ATTOM
cm3/1000 str. +-: 3.0 Check tolerance	+ EXHAUST-GAS RECIRCULATION + Rated speed rpm : 1000
cm3/1000s. +-: 4.5	+ Del. quantity
Shutoff solenoid Volt : 12	+ cm3/1000 strokes : 19.5 + Tolerance + cm3/1000 str. +- : 1.0
	Check tolerance cm3/1000s. +: 2.0

Shutoff solenoid Volt 12 START TRANSITION Rated speed rpm 400 Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 str. +-:10.0 Shutoff solenoid Volt 12 Rated speed rpm 220 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-:15.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 6.7 : 3,3 Dimension K mm Tolerance mm +-:+-0.1Dimension KF mm : 5,5 Tolerance mm +-: +-0,2 Dimension MS mm : 1,8 Tolerance mm +-: +-0,2 **POTENTIOMETER** SET 1. measurement : 5,0 voltage Volt 1. measurement : 1,85 voltage Volt **MICROSWITCH** SET : ARF 12,0 End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.04.95 Test oil : ISO 4113

: 0 460 494 408 Part no. Pump designation : VE4/9F2100R508-2

Customer-spec. information : FIAT-AUTO Customer : M710 HT19.D Motor Power KW 66.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C 45 Tolerance °C +-:

Overflow

0.75 restriction mm :

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

#### REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000

Aneroid pressure

hPa 1000

Setting mm 2.8 Tolerance mm 0.1 Shutoff solenoid

Volt 12

# SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Aneroid pressure

hPa 1000

Supply pump

pressure bar 4.8 Tolerance bar +-: 0.3 Shutoff solenoid

12 Volt

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500

Aneroid pressure

hPa 1000

Del. quantity

cm3/1000 strokes : 52.0 Tolerance

cm3/1000 str. + :0.5 Spread

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s.2.5

Shutoff solenoid

12 Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 40.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 2.5

#### HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:1.0

Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12
IDLE DELIVERY			Ī	TIMING-DEVICE TRAN	/EL	DIFFERENCE
Rated speed rpm Del. quantity	: 450	0	Ī	Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes Tolerance	: 1	4.0	1	cm3/1000 strokes Tolerance	:	-0.8
cm3/1000 str. +- Spread	:	2.0	<del> </del>	cm3/1000 str. +- Shucoff solenoid	:	0.1
cm3/1000 strokes Shutoff solenoid	: :	2.5	†	Volt	:	12
Volt	:	12	+	INJECTION-PUMP TES	ST S	SPECIFICATIONS
FULL-LOAD SPEED R	EGULATION	N	†	TIMING DEVICE CHAR	RACT	TERISTIC
Rated speed rpm	: 2400	ר	Ī	Rated speed rpm	:	2100
Pressure hPa		000	1	Aneroid pressure	•	2100
Del. quantity			+	hPa	:	1000
cm3/1000 strokes	: 20	5.0	+			
Tolerance		7.0	+	SV travel mm	:	7.9
cm3/1000 str. +- Shutoff solenoid	•	3.0	†	Tolerance mm + Check	:	0.3
Volt	:	12	Ŧ	tolerance mm +-	:	0.7
STARTING FUEL DEL	IVERY		Ī	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity	: 100	)	-	Rated speed rpm Aneroid pressure	:	1500
cm3/1000 strokes Tolerance	: 65	5.0	1	hPa	:	1000
cm3/1000 str. +- Shutoff solenoid	: 15	5.0	+	SV travel mm Tolerance mm +-	:	5.2 0.3
Volt	:	12	+	Check tolerance mm +-	:	0.7
			İ	Shucoff solenoid Volt	:	12
LOAD-DEPENDENT STA	ART OF DE	ELIVERY	+	SUPPLY PUMP PRESSU	JRE	CHARACTERISTIC
DELIVERY DIFFEREN	CE		†	Rated speed rpm		2100
Rated speed rpm Del. quantity	: 1500	ס	Ī	Aneroid pressure hPa Supply pomp	:	1000
cm3/1000 strokes Tolerance	: -10	0.0	1	pressure bar Tolerance bar +-	:	7.8 0.3
cm3/1000 str. +- Shutoff solenoid	: 1	1.0	+	Shutoff solenoid Volt	:	12
	:	12	+		-	
PRESSURE DIFFEREN	CE		+	Rated speed rpm Aneroid pressure		
Rated speed rpm	: 1500	)	‡	hPa Supply pomp	:	1000
Del. quantity cm3/1000 strokes Tolerance	: -0	0.2	‡	pressure bar Tolerance bar +-	:	0.2 0.3
cm3/1000 str. +-	: 0	0.1	Ţ	Shutoff solenoid Volt	:	12

OVERFLOW QUANTITY			1	-	Shutoff solenoid Volt	:	12
000000000000000000000000000000000000000			1	-	VOCC	•	12
Rated speed rpm	: 2	2100	+	-	Rated speed rpm	:	750
Aneroid pressure	_	4000	†	-	Aneroid pressure		
liPa Overflow quantity	:	1000	†	-	hPa	:	450
ccm/10s	•	138.8	I	_	LDA/		
Tolerance	•		4	-	HBA stroke mm	:	6.7
ccm/10s +-	:	41.6	+	-	Del. quantity		
Chaok talanana			†	-	cm3/1000 strokes	:	47.5
Check tolerance +-	•	41.6	Ī	-	Tolerance cm3/1000 str. +-	•	0.5
Shutoff solenoid	•	71.0	1		Check tolerance	•	0.5
Volt	:	12	+	-	cm3/1000s. +-	:	2.5
Deduct and and		DET:	†	-	Shutoff solenoid		45
Rated speed rpm Aneroid pressure	:	75Ű	1	• -	Volt	:	12
hPa	:	1000	I	-	Rated speed rpm	:	2100
Overflow quantity	•		1	-	Aneroid pressure	•	2100
ccm/10s	:	97.2	+	-	hPa	:	1000
Tolerance +-		22.2	†	-	Del. quantity		F1 F
ccm/10s +-	•	22.2	1	-	cm3/1000 strokes Tolerance	:	51.5
Check tolerance			1	-	cm3/1000 str. +-	:	1.5
ccm/10s +-	:	22.2	+	-	Check tolerance		
Shutoff solenoid		40	†	•	cm3/1000s. +-	:	2.5
Volt	:	12	1	-	Shutoff solenoid Volt		12
DELIVERY AND BREAK	KAWAY	CHARACTERIST	rc I	-	VOCC	•	12
			+	-	Rated speed rpm	:	750
Rated speed rpm	: 2	2400	+	-	Del. quantity		
Aneroid pressure hPa		1000	†	•	cm3/1000 strokes	:	41.0
Del. quantity	•	1000	I		Tolerance cm3/1000 str. +-	•	1.0
cm3/1000 strokes	:	26.0	1	-	Shutoff solenoid	•	1.0
Tolerance			+	-	Volt	:	12
cm3/1000 str. +-	:	3.6	+	•	Dakad an ead one		750
Check tolerance cm3/1000s. +-	•	5.0	1	-	Rated speed rpm Aneroid pressure	:	750
Shutoff solenoid	•	3.0	1	-	hPa	•	1000
Volt	:	12	+	-	Del. quantity		
Data dana adam		2700	†	-	cm3/1000 strokes	:	55.0
Rated speed rpm Aneroid pressure	: 2	2700	Í	-	Tolerance cm3/1000 str. +-		1.5
hPa	:	1000	1	-	Check tolerance	•	( , )
Del. quantity			+	-	cm3/1000s. +-	:	2.5
cm3/1000 strokes	:	3.5	†	•	Shutoff solenoid		40
Shutoff solenoid Volt		12	1	<u>-</u>	Volt	:	12
VOCE	•	12	I		Rated speed rpm	:	1500
Rated speed rpm	: 2	2500	+	-	Aneroid pressure	•	,,,,,
Aneroid pressure		4000	+	-	hPa	:	1000
hPa	:	1000	†	•	Del. quantity		E2 0
Del. quantity cm3/1000 strokes	:	15.0	I		cm3/1000 strokes Tolerance	i	52.0
Tolerance	•		1	•	cm3/1000 str. +-	:	0.5
cm3/1000 str. +-	:	4.0	+	-	Check tolerance		
Check tolerance		<b>5</b> 0	+	•	cm3/1000s. +-	:	2.0
cm3/1000s. +-	:	5.0	+	•			

Shutoff solenoid Volt : 12	<u> </u>
	CHECKING LOAD-DEPENDENT START OF DELIVERY
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	DELIVERY DIFFERENCE
Rated speed rpm : 450	Rated speed rpm : 1500  + Del. quantity
Del. quantity cm3/1000 strokes : 1.5	+ cm3/1000 strokes : -12.0 + Tolerance
Tolerance cm3/1000 str. + : 1.5	+ cm3/1000 str. +-: 4.0 + Check tolerance
Check tolerance cm3/1000s. + : 1.5	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
Spread cm3/1000 strokes : 5.0	+ Volt : 12
FULL-LGAD STOP CONTROL LEVER	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm : 450	Rated speed rpm : 1500  Del. quantity
Del. quantity cm3/1000 strokes : 1.5	cm3/1000 strokes : -0.8
Tolerance cm3/1000 str. + : 1.5	cm3/1000 str. + : 0.1 Check tolerance
Spread cm3/1000 strokes : 5.0	+ cm3/1000s. +-: 0.1 + Shutoff solenoid
Check tolerance cm3/1000s. + : 1.5	Volt : 12
Spread cm3/1000 strokes : 5.0	DELIVERY DIFFERENCE
CIID/1000 Strokes . J.U	Rated speed rpm : 1500  Del. quantity
	cm3/1000 strokes : 5.0
RESIDUAL QUANTITY	cm3/1000 str. + : 1.0
Rated speed rpm : 600 Del. quantity	+ cm3/1000s. +-: 1.0 + Shutoff solenoid
cm3/1000 strokes : 3.0 Tolerance	Volt : 12
cm3/1000 str. + : 1.5 Snutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	Rated speed rpm : 1500 Tolerance mm + : 0.3
IDLE DELIVERY	+ Check + tolerance mm +-: 0.4 + Shutoff solenoid
Rated speed rpm : 500 Del. quantity	Volt : 12
cm3/1000 strokes : 7.0 Tolerance	EXHAUST-GAS RECIRCULATION
cm3/1000 str. + : 3.0 Check tolerance	Rated speed rpm : 1000
cm3/1000s. + : 4.5 Shutoff solenoid	+ Del. quantity + cm3/1000 strokes : 19.5
Volt : 12	+ Tolerance + cm3/1000 str. +-: 1.0
	+ Check tolerance + cm3/1000s. +-: 2.0

Shutoff solenoid Volt 12 START TRANSITION Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 35.0 Toterance cm3/1000 str. +-: 10.0 Shutoff solenoid Volt 12 Rated speed rpm : 220 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str.  $\leftarrow$ : 15.0 Shutoff solenoid 12 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 6.7 Dimension K mm : 3,3 Tolerance mm +-:+-0,1Dimension KF mm : 5,5 Tolerance mm + : + -0.2Dimension MS mm : 1,2 Tolerance mm +-: +-0,2 POTENTIOMETER SET 1. measurement voltage Volt : 5,0 1. measurement voltage Volt : 1,85 MICROSWITCH SET : ARF 12,0 End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.07.95 Test oil : ISO 4113

Part no. : 0 460 404 077 Pump designation : VE4/10F2100R518

Customer-spec. information

Customer : IVECO-SOFIM Motor : 8140.67.2200

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm + : 0,02

Check

tolerance mm +-:0.04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.0 Tolerance mm +-: 0.1 Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Supply pomp

pressure bar : 6.7 Tolerance bar + : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500 Del. quantity

cm3/1000 strokes : 43.0

Tolerance

 $cm3/1000 str. \leftarrow : 0.5$ 

Spread

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 14.0

Tolerance

cm3/1000 str. + : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300

Del. quantity

cm3/1000 strokes : 29.0

<b>.</b>		1
Tolerance cm3/1000 str. +-	: 2.0	tolerance mm +-: 0.7
Shutoff solenoid	. 2.0	Shutoff solenoid
Volt	: 12	Volt : 12
STARTING FUEL DEL	IVERY	Rated speed rpm : 1150
Rated speed rpm	: 100	T SV travel mm : 2.7
Del. quantity cm3/1900 strokes		Tolerance mm + : 0.3 Check
Tolerance cm3/1000 str. +-		tolerance mm +-: 0.7
Shutoff solenoid		+ Shutoff solenoid + Volt : 12
Volt	: 12	Rated speed rpm : 2100
		SV travel mm : 7.3
LOAD-DEPENDENT STA	ART OF DELIVERY	Tolerance mm +: 0.4 Check
DELIVERY DIFFEREN	CF	tolerance mm +-: 0.7 Shutoff solenoid
Rated speed rpm		12 Volt : 12
Del. quantity cm3/1000 strokes		Rated speed rpm : 1500
Tolerance cm3/1000 str. +-		SUPPLY PUMP PRESSURE CHARACTERISTIC
Shutoff solenoid	: 12	Rated speed rpm : 2100
Volt	: 12	+ Supply pomp + pressure bar : 8.8
PRESSURE DIFFEREN	CE	Tolerance bar +-: 0.3  Shutoff solenoid
Rated speed rpm Del. quantity	: 1500	Volt : 12
cm3/1000 strokes	: -0.2	Rated speed rpm : 600
Tolerance cm3/1000 str. +-	: 0.1	+ Supply pomp + pressure bar : 3.5
Shutoff solenoid	. 0.1	† Tolerance bar +: 0.3
Volt	: 12	+ Shutoff solenoid
VOCE	. 12	+ Volt : 12
TIMING-DEVICE TRAN	VEL DIFFERENCE	+
Rated speed rpm	: 1500	Rated speed rpm : 400
Del. quantity cm3/1000 strokes	: -0.5	OVERFLOW QUANTITY
Tolerance cm3/1000 str. +-		Rated speed rpm : 2100 Overflow quantity
Shutoff solenoid		+ ccm/10s : 97.2
Volt	: 12	+ Tolerance + ccm/10s +-: 41.6
INJECTION-PUMP TES	ST SPECIFICATIONS	Check tolerance
TIMING DEVICE CHAR	RACTERISTIC	ccm/10s + : 41.6 Shutoff solenoid
Rated speed rpm	: 1800	† Volt : 12
O		Rated speed rpm : 600
SV travel mm Tolerance mm +-	: 6.9 : 0.3	+ Overflow quantity + ccm/10s : 63.8
		+

Tolerance	+ Tolerance
ccm/10s +-: 22.2	+ cm3/1000 str. +-: 2.0
	+ Check tolerance
Check_tolerance	+ cm3/1000s. $+-$ : 3.0
ccm/10s +-: 22.2	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	+ Rated speed rpm : 1500
DELIVERY AND BREAKAWAY CHARACTERISTIC	+ Del. quantity
Dubad assed ass 3700	+ cm3/1000 strokes : 43.0
Rated speed rpm : 2300	Tolerance
Del. quantity cm3/1000 strokes : 29.0	+ cm3/1000 str. +-: 0.5
Tolerance	+ Check tolerance + cm3/1000s. +-: 2.0
cm3/1000 str. + : 2.0	Shutoff solenoid
Check tolerance	Volt : 12
cm3/1000s. +-: 6.0	1
Shutoff solenoid	1
Volt : 12	
	+ ELECTR. SHUTOFF
Rated speed rpm : 2400	CONTROL LEVER, IDLE STOP
Del. quantity	†
cm3/1000 strokes : 7.0	+ Rated speed rpm : 375
Shutoff solenoid	Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5
Rated speed rpm: : 2600	+ Tolerance cm3/1000 str. +-: 1.5
Del. quantity	+ Check tolerance
cm3/1000 strokes : 1.5	- cm3/1000s. +-: 1.5
Tolerance	+
cm3/1000 str. +-: 1.5	+ FULL-LOAD STOP CONTROL LEVER
Check tolerance	+
cm3/1000s. +-: 1.5	+ Rated speed rpm : 375
Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5
Rated speed rpm : 2100	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : 2100 Del. quantity	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000 strokes : 44.0	- cm3/1000s. +-: 1.5
Tolerance	1.9
cm3/1000 str. +-: 1.5	IDLE DELIVERY
Check tolerance	+
cm3/1000s. +-: 2.5	Rated speed rpm : 465
Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : 1.5
Rated speed rpm : 1000	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm : 1000 Del. quantity	Check tolerance
cm3/1000 strokes : 41.0	- cm3/1000s. +-: 1.5
Tolerance	Shutoff solenoid
cm3/1000 str. +-: 1.5	+ Volt : 12
Check tolerance	}
cm3/1000s. +-: 2.5	+
Shutoff solenoid	†
Volt : 12	†
Rated speed rpm : 600	CHECKING LOAD-DEPENDENT
Rated speed rpm : 600 Del. quantity	+ START OF DELIVERY
cm3/1000 strokes : 36.5	OLIMIN OF PETACKE
	DELIVERY DIFFERENCE
	•

Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	-23.0
Tolerance		
cm3/1000 str. +- Check tolerance	:	3.0
cm3/1000s. +- Shutoff solenoid	:	4.0
Volt	:	12
TIMING-DEVICE TRA	VEL	DIFFERENCE
Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	-0.5
Tolerance	·	_
cm3/1000 str. +- Check tolerance	:	0.1
cm3/1000s. +- Shutoff soleroid	:	0.1
Volt	:	12
DELIVERY DIFFERENCE	Œ	
Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	1.0
Tolerance cm3/1000 str. +-		1.0
Check tolerance		
cm3/1000s. + Shutoff solenoid	:	1.0
Volt	:	12
TIMING-DEVICE TRAN	/EL	DIFFERENCE
Rated speed rpm	:	1500
Tolerance mm + Check	:	0.4
tolerance mm +- Shutoff solenoid	:	0.4
Volt	:	12
START TRANSITION		
Rated speed rpm		
	:	500
Del. quantity cm3/1000 strokes	:	500 35.0
Del. quantity	:	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	:	35.0 10.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	:	35.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	:	35.0 10.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid Volt	:	35.0 10.0 12

Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12

### ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : Dimension KF mm : 5,8
Tolerance mm +- : +-0,2
Dimension MS mm : 1,8
Tolerance mm +- : +-0,1
KSB travel mm : 11,5

POTENTIOMETER

SET

1. measurement voltage Volt : 5,0

1. measurement voltage Volt : 2,31

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 41,8..47,0

End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.07.95 : ISO 4113 Test oil

: 0 460 404 084 Part no. Pump designation: VE4/10F2100R518-1

Customer-spec. information

: IVECO-SOFIM Customer : 8140.67.2200 Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance \*C +-: 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-: 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm +-: +-0,02

Check

tolerance mm +-: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm 5.0 Tolerance mm 0.1 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Supply pomp

pressure bar 6.7 Tolerance bar +-: 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500

Del. quantity

cm3/1000 strokes : 43.0

Tolerance

cm3/1000 str. + :0.5

Spread

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 14.0

Tolerance

cm3/1000 str. +-:2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm 2300

Del. quantity

cm3/1000 strokes : 29.0

Tolonomea	) Charle
Tolerance cm3/1000 str. +- : 2.0	+ Check + tolerance mm + : 0.7
Shutoff solenoid	+ tolerance mm + : 0.7 + Shutoff solenoid
Volt : 12	
vo(t : 12	† Volt : 12
STARTING FUEL DELIVERY	Rated speed rpm : 1150
SIMPLIAR FORE DELIVER!	Rated speed rpm : 1150
Rated speed rpm : 100	SV travel mm : 2.7
Del. quantity	Tolerance mm +-: 0.3
ca3/1000 strokes : 85.0	+ Check
Tolerance	tolerance mm +: 0.7
cm3/1000 str. +-: 20.0	+ Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	
, ,	Rated speed rpm : 2100
	T raked speed (pill . 2100
	SV travel mm : 7.3
LOAD-DEPENDENT START OF DELIVERY	Tolerance mm +: 0.4
SETTING	Check
00111110	tolerance mm +: 0.7
DELIVERY DIFFERENCE	+ Shutoff solenoid
DELIVERY DITTERCHOL	Volt : 12
Rated speed rpm : 1500	1
Del. quantity	Rated speed rpm : 1500
cm3/1000 strokes : -22.0	Nated speed (piii : 1900
Tolerance	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 str. +-: 1.0	TOUTH TOTAL REDSOILE COMMUNICIPALITY
Shutoff solenoid	+ Rated speed rpm : 2100
Volt : 12	+ Supply pomp
, ,,,,	+ pressure bar : 8.8
PRESSURE DIFFERENCE	+ Tolerance bar +-: 0.3
	+ Shutoff solenoid
Rated speed rpm : 1500	
Rated speed rpm : 1500 Del. quantity	Volt : 12
Del. quantity	+ Volt : 12
Del. quantity cm3/1000 strokes : -0.2	Volt : 12 Rated speed rpm : 600
Del. quantity cm3/1000 strokes : -0.2 Tolerance	Rated speed rpm : 600 Supply pomp
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1	Polt: 12 Rated speed rpm: 600 Supply pomp pressure bar: 3.5
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +: 0.3
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +- : 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +: 0.3
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +: 41.6
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar +-: 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s +-: 41.6  Check tolerance ccm/10s +-: 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800  SV travel mm : 6.9	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600 Overflow quantity
Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.5 Tolerance cm3/1000 str. +-: 0.1 Shutoff solenoid Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 1800	Rated speed rpm : 600 Supply pomp pressure bar : 3.5 Tolerance bar + : 0.3 Shutoff solenoid Volt : 12  Rated speed rpm : 400  OVERFLOW QUANTITY  Rated speed rpm : 2100 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s + : 41.6  Check tolerance ccm/10s + : 41.6  Shutoff solenoid Volt : 12  Rated speed rpm : 600

<b>-</b> 1				
Tolerance		22.2	+	Tolerance
ccm/10s +-	:	22.2	+	cm3/1000 str. +-: 2.0
			+	Check tolerance
Check tolerance			+	cm3/1000s. +-: 3.0
ccm/10s +-	:	22.2	+	Shutoff solenoid
Shutoff solenoid			1	Volt : 12
Volt	:	12	<u> </u>	
	•	· <b>-</b>	1	Rated speed rpm : 1500
DELIVERY AND BREAK	< AWAY	CHADACTEDISTIC	T	Del. quantity
DECTAEK! WAS DECV	/UM/	CHARACIERISIIC	T	
Bakad seed as		700	†	cm3/1000 strokes : 43.0
Rated speed rpm	: 7	2300	†	Tolerance
Del. quantity			Ť	cm3/1000 str. + : 0.5
cm3/1000 strokes	:	29.0	+	Check tolerance
Tolerance			+	cm3/1000s. + : 2.0
cm3/1000 str. +	:	2.0	+	Shutoff solenoid
Check tolerance			+	Volt : 12
cm3/1000s. +-	:	6.0	1	
Shutoff solenoid			1	
Volt	•	12	1	
400 C	•	14	I	ELECTR. SHUTOFF
Dated aread		2400	T	
Rated speed rpm	: 7	C++UU	Ť	CONTROL LEVER, IDLE STOP
Del. quantity	_	40.0	†	
cm3/1000 strokes	:	10.0	Ť	Rated speed rpm : 375
Shutoff solenoid			+	Del. quantity
Volt	:	12	+	cm3/1000 strokes : 1.5
			+	Tolerance
Rated speed rpm	: 7	2600	+	cm3/1000 str. + : 1.5
Del quantity			1	Check tolerance
cm3/1000 strokes	:	1.5	1	cm3/1000s. +-: 1.5
Tolerance	•		1	1.5
cm3/1000 str. +-	•	1.5	1	FULL-LOAD STOP CONTROL LEVER
Check tolerance	•	1.5	T	FULL-EUAD STOP CONTROL LEVER
		1.5	<b>†</b>	Data dama dama da 777
cm3/1000s. +-		1.5	†	Rated speed rpm : 373
Shutoff solenoid		4.0	†	Del. quantity
Volt	:	12	t	cm3/1000 strokes : 1.5
			+	Tolerance
Rated speed rpm	: 7	2100	+	cm3/1000 str. + : 1.5
Del. quantity			+	Check tolerance
cm3/1000 strokes	:	44.0	.}_	cm3/1000s. +-: 1.5
Tolerance			1	
cm3/1000 str. +	:	1.5	1	IDLE DELIVERY
Check tolerance	-		1	
cm3/1000s. +-	•	2.5	1	Rated speed rpm : 465
Shutoff solenoid	•	412	$\mathbf{I}$	Del. quantity
Volt	•	12	Ţ	cm3/1000 strokes : 1.5
VOLL	•	16	T	
Order de marce et more		1000	<b>T</b>	Tolerance
Rated speed rpm	• 1	1000	†	cm3/1000 str. + : 1.5
Del. quantity		44.0	†	Check tolerance
cm3/1000 strokes	:	41.0	+	cm3/1000s. +-: 1.5
Tolerance			+	Shutoff solenoid
cm3/1000 str. +-	:	1.5	+	Volt : 12
Check tolerance			+	
cm3/1000s. +-	:	2.5	+	
Shutoff solenoid			+	
Volt	:	12	1	
	-	· <del>-</del>	1	
Rated speed rpm	•	600	1	CHECKING LOAD-DEPENDENT
	•	~~0	I	START OF DELIVERY
Del. quantity cm3/1000 strokes		36.5	Ţ	OTANT OF DECIVER!
CMD/ IUUU STrokes	•	JO. J	7	NEI THERY DIEFERENCE
			+	DELIVERY DIFFERENCE

Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	-23.0
Tolerance cm3/1000 str. +-	:	3.0
Check tolerance cm3/1000s. +- Shutoff solenoid	:	4.0
Volt	:	12
TIMING-DEVICE TRA	/EL	DIFFERENCE
Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes Tolerance	:	-0.5
cm3/1000 str. +- Check tolerance	:	0.1
cm3/1000s. +- Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	:	1500
cm3/1090 strokes Tolerance	:	1.0
cm3/1000 str. +- Check tolerance	:	1.0
cm3/1000s. +- Shutoff solenoid	:	1.0
Volt	:	12
TIMING-DEVICE TRAN	/EL	DIFFERENCE
Rated speed rpm Tolerance mm: +-	:	1500 0.4
Check tolerance mm +-	:	0.4
Shutoff solenoid Volt	:	12
START TRANSITION		
Rated speed rpm Del. quantity	:	500
cm3/1000 strokes Tolerance	:	35.0
cm3/1000 str. +-	:	10.0

Tolerance
cm3/1000 str. + : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : Dimension KF mm : 5,8
Tolerance mm + : +0,2
Dimension MS mm : 1,8
Tolerance mm + : +0,2
KSB travel mm : 11,5

CONTROL LEVER POSITION
SET

Control lever
position YA mm: : 37,9..39,9

Control lever
position YB mm : 41,8..47,0

End of test-specification sheet

Volt

Shutoff solenoid

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 70.0

12

BOSCH INJ. PUMP TEST SPECIFICATIONS	+ Rated speed rpm : 1400
Note remarks	+ Aneroid pressure + hPa : 1200
WOLE LEMBLIKS	† hPa : 1200
Refer to Service Info for test and	Setting mm : 3.2
adjustment instructions.	+ Tolerance mm +: 0.1
See microcard(s) W400/	+ Shutoff solenoid
oce mitti ocai a (3) whoo/:::	
Edition : 11.07.95	+ Volt : 12
EQ16100 : 11.07.95	T august v augus andagus
Test oil : ISO 4113	+ SUPPLY PUMP PRESSURE
	†
Part no. : 0 460 414 112	+ Rated speed rpm : 1400
Pump designation : VE4/11F1900R521-1	+ Aneroid pressure
	+ hPa : 1200
<del></del>	+ Supply pomp
Custamer-spec. information	pressure bar : 7.5
	Tolerance bar + : 0.3
Customer : IVECO-SOFIM Motor : 8140.27.2560	
Motor : 8140.27.2560	+ Shutoff solenoid
	+ Volt : 12
	†
TEST BENCH REQUIREMENTS	+ FULL-LOAD DELIVERY WITH BOOST PRESS
Calibration of	1000
Calibrating-oil	+ Rated speed rpm : 1000
return	+ Aneroid pressure
temperature °C : 45	+ hPa : 1200
Tolerance °C + : 1	† Del. quantity
	- cm3/1000 strokes : 47.0
0verflow	+ Tolerance
restriction mm : 0.75	+ cm3/1000 str. + : 0.5
restriction min : 0.75	· ·
	+ Spread
	+ cm3/1000 strokes : 4.0
Inlet press. bar : 0.35	+ Check tolerance
Tolerance bar + : 0.05	+ cm3/1000s. : 4.5
	+ Shutoff solenoid
	+ Volt : 12
Test nozzle holde	1
	T FULL MAN NELTH LITTIOUT BOOKT BOOK
assembly : 1 688 901 027	FULL-LOAD DELIV. WITHOUT BOOST PRES
Opening pressure	+ Rated speed rpm : 550
Opening pressure	
bar : 250	+ Del. quantity
Tolerance bar +-: 3	+ cm3/1000 strakes : 26.5
	+ Tolerance
	+ cm3/1000 str. +-: 0.5
Test lines : 1 680 750 073	+ Shutoff solenoid
	+ Volt : 12
Outside diameter : 6.00	Check tolerance
valside diameter . 0.00	
	+ cm3/1000s. : 4.5
x inside diameter : 2.00	†
x length mm : 450	+ IDLE SETTING
	+
	+ Rated speed rpm : 300
REMARKS	+ Del. quantity
The state of the s	+ cm3/1000 strokes : 10.0
	<b>,</b>
	† Tolerance
	+ cm3/1000 str. +-: 2.0
	+ Shutoff solenoid
INJECTION PUMP SETTING VALUES	+ Volt : 12
	Spread
TIMING DEVICE TRAVEL	+ cm3/1000 strokes : 6.0
I A PIATRO I VE VALLE I I I MAVELE	i ciii) lood sti okes .

Check tolerance cm3/1000s.	:	6.5	Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. +-: Shutoff solenoid Volt:	-0.8 0.1 12
FULL-LOAD SPEED R	EGULAT	ION		
Rated speed rpm Pressure hPa Del. quantity		100 1200	- INJECTION-PUMP TEST - TIMING DEVICE CHARAC	
cm3/1000 strokes Tolerance	:	35.0	Rated speed rpm :	
cm3/1000 str. +- Shutoff solenoid	:	2.0	Aneroid pressure hPa	1200
Volt	:	12	SV travel mm :	5.7
STARTING FUEL DEL	IVERY	1	Tolerance mm + :	0.3
Rated speed rpm Del. quantity	:	100	tolerance mm + : Shutoff solenoid	0.7
cm3/1000 strokes	:	65.0	Volt :	12
cm3/1000 str. +- Shutoff solenoid	:	25.0	Rated speed rpm : Aneroid pressure	1250
Volt	:	12	· hPa :	1200
LOAD-DEPENDENT ST	ART OF	DELIVERY	SV travel mm : Tolerance mm +-: Check	1.7 0.3
SETTING		,	tolerance mm + : Shutoff solenoid	0.7
DELIVERY DIFFEREN	CE	‡	· Volt :	12
Rated speed rpm Pressure hPa	: 1	400 1200	Rated speed rpm : Aneroid pressure	
Del. quantity cm3/1000 strokes	:	-22.0	hPa :	1200
Tolerance cm3/1000 str. +- Shutoff solenoid		1.0	SV travel mm : Tolerance mm +-: Check	5.7 0.3
Volt	:	12	tolerance mm +-: Shutoff solenoid	0.7
PRESSURE DIFFEREN	CE		Volt :	12
Rated speed rpm Aneroid pressure	: 1	400	SUPPLY PUMP PRESSURE	CHARACTERISTIC
hPa Del. quantity	:	1200	Rated speed rpm : Aneroid pressure	1900
cm3/1000 strokes Tolerance	:	-0.2	hPa : Supply pomp	1200
cm3/1000 str. +- Shutoff solenoid	•	0.1	pressure bar : Tolerance bar +-:	9.6 0.3
Volt	•	12	Shutoff solenoid Volt :	12
TIMING-DEVICE TRA		<del>-</del>	Rated speed rpm :	800
Rated speed rpm Aneroid pressure	: 1	400	Aneroid pressure hPa :	1200
hPa	:	1200		· _ ~ <del>-</del>

Supply pomp		+	Rated	speed rpm :	2300
pressure bar Tolerance bar +-	: 4.6 : 0.3	]	- Anero - hPa	id pressure	1200
Shutoff solenoid	. 0.5			quantity .	1200
Volt	: 12	4	- cm3/1 - Toler	000 strokes :	1.5
OVERFLOW QUANTITY		-	- cm3/1	000 str. +-: tolerance	1.5
Rated speed rpm	: 1900	1	- cm3/1	000s. +-:	1.5
Aneroid pressure hPa	: 1200		- Shuto - Volt	ff solenoid :	12
Overflow quantity ccm/10s	: 138.8	1	- Rated	speed rpm :	800
Tolerance ccm/10s +-	: 41.6	4	- Anero - hPa	id pressure :	450
Check tolerance			LDA/		
ccm/10s +- Shutoff solenoid	: 41.6		- HBA s	troke mm : quantity	5.8
Volt	: 12	-		000 strokes :	41.5
	: 800	]	- cm3/1	000 str. +-:	0.5
Aneroid pressure	: 1200	1	- cm3/1	tolerance 000S. +-:	3.5
Overflow quantity ccm/10s	: 97.2	1	- Shuto - Volt	ff solenoid :	12
Tolerance ccm/10s +-	: 22.2	4	- - Rated	speed rpm :	1900
Check tolerance		-		id pressure	1200
ccm/10s +- Shutoff solenoid	: 22.2	-	- Del.	quantity 000 strokes :	
Volt	: 12		- Toler		
DELIVERY AND BREAK	KAWAY CHARAC	CTERISTIC	- Check	tolerance	
Rated speed rpm	: 2100		- Shuto	UUUS. +-: ff solenoid	
Aneroid pressure hPa	: 1200	-	- Volt		12
Del. quantity cm3/1000 strokes	: 35.0	1	- Del.	speed rpm : quantity	800
Tolerance cm3/1000 str. +-	: 2.0	1	- Toler		
Check tolerance cm3/1000s. +-	: 4.5		- Check	000 str.  ← : tolerance	
Shutoff solenoid Volt	: 12	+	- cm3/1 - Shuto	000S. +-: ff solenoid	3.5
Rated speed rpm	: 2000	†	- Volt	:	12
Aneroid pressure hPa	: 1200			speed rpm : id pressure	1750
Del. quantity cm3/1000 strokes		1	- hPa	quantity	1200
Tolerance cm3/1000 str. +-				000 strokes :	48.0
Check tolerance	. 7.0	1	- cm3/1	000 str. +-:	2.5
cm3/1000s. +-	: 6.0	+	- Check	tolerance	
Shutoff solenoid Volt	: 12	‡		UUUS. + : ff solenoid	3.5
		+	- Volt	:	12

Detail are all many at 200	†
Rated speed rpm : 800 Aneroid pressure	†
hPa : 1200	T
Del. quantity	CHECKING LOAD-DEPENDENT
cm3/1000 strokes : 47.0	+ START OF DELIVERY
Tolerance	1
cm3/1000 str. +-: 4.5	<pre>DELIVERY DIFFERENCE</pre>
Check tolerance	+
cm3/1000s. +-: 5.5	+ Rated speed rpm : 1400
Shutoff solenoid	+ Aneroid pressure
Volt : 12	+ hPa : 1200
Rated speed rpm : 1000	+ Del. quantity
Rated speed rpm : 1000 Aneroid pressure	+ cm3/1000 strokes : -24.0 + Tolerance
hPa : 1200	+ cm3/1000 str. +-: 3.0
Del. quantity	Check tolerance
cm3/1000 strokes : 47.0	- cm3/1000s. + : 4.0
Tolerance	Shutoff solenoid
cm3/1000 str. +-: 0.5	+ Volt : 12
Check tolerance	+
cm3/1000s. + : 3.5	+ TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid	· †
Volt : 12	Rated speed rpm : 1400
	+ Aneroid pressure
	+ hPa : 1200 + Del. quantity
ELECTR. SHUTOFF	+ cm3/1000 strokes : -0.8
CONTROL LEVER, IDLE STOP	Tolerance
CONTINUE CERTAIN TOLE OF OR	+ cm3/1000 str. +-: 0.1
Rated speed rpm : 300	- Check tolerance
Del. quantity	+  cm3/1000s. +-: 0.1
cm3/1000 strokes : 1.5	† Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 str. +-: 1.5	+
Check tolerance	+ DELIVERY DIFFERENCE
cm3/1000s. +-: 1.5	Total mand man 1/00
STULL LOAD STOP CONTROL LEVES	+ Rated speed rpm : 1400
FULL-LOAD STOP CONTROL LEVER	+ Aneroid pressure + hPa : 1200
Rated speed rpm : 300	+ Del. quantity
Del. quantity	cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5	Tolerance
Tolerance	+ cm3/1090 str. +-: 1.5
cm3/1000 str. +-: 1.5	+ Check tolerance
Check tolerance	+ cm3/1000s. +-: 1.5
cm3/1000s. +-: 1.5	+ Shutoff solenoid
101 E 0E 11/E0V	† Volt : 12
IDLE DELIVERY	TIMING-DEVICE TRAVEL DIEFERENCE
Rated speed rpm : 425	† TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity	Rated speed rpm : 1400
cm3/1000 strokes : 1.5	Aneroid pressure
Tolerance	+ hPa : 1200
cm3/1000 str. + : 1.5	+ Tolerance mm +: 0.4
Check tolerance	+ Check
cm3/1000s. +-: 1.5	tolerance mm + : 0.4
Shutoff solenoid	+ Shutoff solenoid
Volt : 12	+ Volt : 12
	+

#### START TRANSITION

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 22.0

Tolerance

cm3/1000 str. + : 8.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 200

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 str. + : 25.0

Shutoff solenoid

Volt : 12

#### ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.8

Dimension K mm : K1
Dimension KF mm : 6,0
Tolerance mm + : +-0,2
MS1 dimension mm : 1,4

Tolerance mm +-:+0,15/-0,1

KSB travel mm : 7,0

### CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 44,1..49,9

End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.95 Test oil : ISO 4113

Part no. : 0 460 414 134 Pump designation : VE4/11F1900R521-2

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.27.2585
Power KW : 76.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature  $^{\circ}C$  : 45 Tolerance  $^{\circ}C$   $\leftarrow$  : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Anëroid pressure
hPa : 1200

Setting mm : 3.4
Tolerance mm +- : 0.1
Shutoff solenoid
Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hFa : 1200
Supply pomp
pressure bar : 6.7
Tolerance bar +-: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750 Aneroid pressure hPa 1200 Del. quantity cm3/1000 strokes : 51.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid Volt 12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : .27.0
Tolerance
cm3/1000 str. +- : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 4.5

# IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 str. +- : 2.0
Shutoff solenoid
Volt : 12

Spread	+	Aneroid pressure	
cm3/1000 strokes : Check tolerance	6.0	hPa : Del. quantity	1200
cm3/1000s. :	6.5	cm3/1000 strokes : Tolerance	-1.0
	1	cm3/1000 str. + : Shutoff solenoid	0.1
	Ţ	Volt :	12
FULL-LOAD SPEED REGULA	TION		·
Rated speed rpm : 7 Pressure hPa :	2050 1200	INJECTION-PUMP TEST	SPECIFICATIONS
Del. quantity cm3/1000 strokes :	40.0	TIMING DEVICE CHARAC	CTERISTIC
Tolerance	+	Rated speed rpm :	1600
cm3/1000 str. ⊹— : Shutoff solenoid	2.0	Aneroid pressure hPa :	1200
Volt :	12	SV travel mm :	5.1
STARTING FUEL DELIVERY	+	Tolerance mm +-:	0.3
Rated speed rpm :	100	tolerance mm +-:	0.7
Del. quantity cm3/1000 strokes :	70.0	Shutoff solenoid Volt :	12
Tolerance cm3/1000 str. +-:	25.0	Rated speed rpm :	1200
Shutoff solencid Volt :	12	Aneroid pressure hPa :	1200
	+		
	‡	SV travel mm : Tolerance mm +-:	1.6 0.3
LOAD-DEPENDENT START OF SETTING	F DELIVERY +	Check tolerance mm +-:	0.7
DELIVERY DIFFERENCE	‡	Shutoff solenoid Volt :	12
Rated speed rpm : '	1400	Rated speed rpm :	1900
Pressure hPa :	1200	Aneroid pressure	
Del. quantity cm3/1000 strokes :	-8.0 +	hPa :	1200
Tolerance cm3/1000 str. +-:	1.0	SV travel mm :	5.7 0.3
Shutoff solenoid	<del>}</del>	Tolerance mm +-: Check	0.5
Volt :	12	tolerance mm + : Shutoff solenoid	0.7
PRESSURE DIFFERENCE	Ì	Volt :	12
Rated speed rpm : ´Aneroid pressure	1400	SUPPLY PUMP PRESSURE	CHARACTERISTIC
hPa :	1200	Rated speed rpm :	1900
Del. quantity cm3/1000 strokes :	-0.2	Aneroid pressure hPa :	1200
Tolerance cm3/1000 str. +-:	0.1	Supply pomp pressure bar :	8.8
Shutoff solenoid Volt :	12	Tolerance bar +-: Shutoff solenoid	0.3
	+	Volt :	12
TIMING-DEVICE TRAVEL DI	+	Rated speed rpm :	700
Rated speed rpm : 1	1400 +		

L02

Aneroid pressure hPa		1200		+	Rated speed rpm	:	2300
Supply pomp	•	1200		Į	Aneroid pressure hPa	:	1200
pressure bar	:	3.7		+	Del. quantity		
Tolerance bar +-	•	0.3		+	cm3/1000 strokes	:	1.5
Shutoff solenoid		40		+	Tolerance		4 5
Volt	:	12		†	cm3/1000 str. +-	:	1.5
OVERFLOW QUANTITY				I	Check tolerance cm3/1000s. +-		1.5
OTEM CON COMMITTIE				1	Shutoff solenoid	•	1.7
Rated speed rpm	:	1900		+	Volt	:	12
Aneroid pressure				+			
hPa	:	1200		†	Rated speed rpm	:	800
Overflow quantity ccm/10s		152.7		t	Aneroid pressure hPa		500
Tolerance	•	176.1		I	IIra	:	טטכ
ccm/10s +-	:	41.6		1	LDA/		
				+	HBA stroke mm	:	4.7
Check tolerance				+	Del. quantity		
ccm/10s +-	:	41.6		+	cm3/1000 strokes	:	42.0
Shutoff solenoid Volt		12		†	Tolerance cm3/1000 str. +-		0.5
VOCE	•	12		I	Check tolerance	•	0.5
Rated speed rpm	:	700		1	cm3/1000s. +-	:	3.5
Aneroid pressure				1	Shutoff solenoid	-	
hPa	:	1200		+	Volt	:	12
Overflow quantity		111 1		+			4000
ccm/10s Tolerance	:	111.1		†	Rated speed rpm	:	1900
ccm/10s +-		22.2		I	Aneroid pressure hPa	•	1200
7 Com 103	•			1	Del. quantity	•	1200
Check tolerance				1	cm3/1000 strokes	:	50.0
ccm/10s +-	:	22.2		+	Tolerance		
Shutoff solenoid		40		+	cm3/1000 str. +-	:	2.5
Volt	:	12		†	Check tolerance cm3/1000s. +-		3.5
DELIVERY AND BREA	KAWA	Y CHARAC	TERTSTIC	I	cm3/1000S. +- Shutoff solenoid	•	3.3
DELITER FACE SILES		ii onanas	121120110	1	Volt	:	12
Rated speed rpm	:	2050		1		·	
Aneroid pressure				+	Rated speed rpm	:	800
hPa	:	1200		+	Del. quantity		70.0
Del. quantity cm3/1000 strokes		40.0		†	cm3/1000 strokes Tolerance	:	30.0
Tolerance	•	40.0		I	cm3/1000 str. +-	•	2.5
cm3/1000 str. +-	:	2.0		1	Check tolerance	•	2.5
Check tolerance				+	cm3/1000s. +-	:	3.5
cm3/1000s. +-	:	4.5		+	Shutoff solenoid		
Shutoff solenoid		12		†	Volt	:	12
Volt	·	12		Ī	Rated speed rpm	:	1000
Rated speed rpm	:	2150		1	Aneroid pressure	•	1000
Aneroid pressure				+	hPa	:	1200
hPa	:	1200		+	Del. quantity		
Del. quantity		24 0		†	cm3/1000 strokes	:	50.5
cm3/1000 strokes Check tolerance	:	21.0		<u>†</u>	Tolerance cm3/1000 str. +-		2.5
cm3/1000s. +-	•	6.0		I	Check tolerance	•	2.5
Shutoff solenoid	•			1	cm3/1000s. +-	:	4.0
Volt	:	12		+	Shutoff solenoid		
				+	Volt	:	12

	+ Rated speed rpm : 250
Rated speed rpm : 700 Aneroid pressure	+ Del. quantity + cm3/1000 strokes : 35.0
hPa : 1200	+ Tolerance
Del. quantity cm3/1000 strokes : 54.0	+ cm5/1000 str. +-: 5.0 + Check tolerance
Tolerance cm3/1000 str. +-: 4.5	+ cm3/1000s. +-: 6.0 + Shutoff solenoid
Check tolerance	Volt : 12
cm3/1000s. +-: 5.5 Shutoff solenoid	‡
Volt : 12	<u>†</u>
Rated speed rpm : 1750	
Aneroid pressure hPa : 1200	+ CHECKING LOAD-DEPENDENT + START OF DELIVERY
Del. quantity cm3/1000 strokes : 51.0	DELIVERY DIFFERENCE
Tolerance cm3/1000 str. +-: 0.5	Rated speed rpm : 1400
Check tolerance	+ Aneroid pressure
cm3/1000s. +-: 3.5 Shutoff solenoid	+ hPa : 1200 + Del. quantity
Volt : 12	+ cm3/1000 strokes : -12.0 + Tolerance
	+ cm3/1000 str. +- : 3.0 + Check tolerance
ELECTR. SHUTOFF	+ cm3/1000s. +-: 4.0
CONTROL LEVER, IDLE STOP	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 300 Del. quantity	+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5 Tolerance	+
cm3/1000 str. +-: 1.5	+ Rated speed rpm : 1400 + Aneroid pressure
Check tolerance cm3/1000s. +-: 1.5	+ hPa : 1200 + Del. quantity
FULL-LOAD STOP CONTROL LEVER	+ cm3/1000 strokes : -1.0 + Tolerance
	+ cm3/1000 str. +-: 0.1
Rated speed rpm : 300 Del. quantity	+ Check tolerance + cm3/1000s. +-: 0.1
cm3/1000 strokes : 1.5 Tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000 str. +-: 1.5	+
Check tolerance cm3/1000s. +-: 1.5	† DELIVERY DIFFERENCE
IDLE DELIVERY	+ Rated speed rpm : 1400 + Aneroid pressure
	+ hPa : 1200
Del. quantity	+ Del. quantity + cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5 Tolerance	+ Tolerance + cm3/1000 str. +-: 1.5
cm3/1000 str. +- : 1.5 Check tolerance	+ Check tolerance + cm3/1000s. + : 1.5
cm3/1000s. +-: 1.5	+ Shutoff solenoid
Shutoff solenoid Volt : 12	† Volt : 12
	TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Aneroid pressure	: 1400
hPa Tolerance mm	: 1200 : 0.4
Check	
tolerance mm +- Shutoff solenoid Volt	
	: 12
START TRANSITION	
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 24.0
Tolerance cm3/1000 str. +-	: 8.0
Shutoff solenoid Volt	: 12
Rated speed rpm Del. quantity	: 200
cm3/1000 strokes	: 80.0
Tolerance	
Tolerance cm3/1000 str. +- Shutoff solenoid	: 25.0
cm3/1000 str. +- Shutoff solenoid Volt	: 12
-	: 12  STMENT DIMENSIONS  : 4.7 : 3,3 : +-0,1 : 8,4 : +-0,2 : 1,5 : +0,15/0,1
cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS  LDA/ HBA stroke mm Dimension K mm Tolerance mm +- Dimension KF mm Tolerance mm +- MS1 dimension mm Tolerance mm +-	: 12  STMENT DIMENSIONS  : 4.7 : 3,3 : +-0,1 : 8,4 : +-0,2 : 1,5 : +0,15/0,1 : 7,0
cm3/1000 str. +- Shutoff solenoid Volt  ASSEMBLY AND ADJUS  LDA/ HBA stroke mm Dimension K mm Tolerance mm +- Dimension KF mm Tolerance mm +- KSB travel mm  CONTROL LEVER POSI	: 12  STMENT DIMENSIONS  : 4.7 : 3,3 : +-0,1 : 8,4 : +-0,2 : 1,5 : +0,15/0,1 : 7,0  CTION

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End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19,10.95 : ISO 4113 Test oil

: 0 460 414 122 Part no. Pump designation: VE4/11F1900R522-2

Customer-spec. information

Customer : IVECO-SOFIM : 8140.27.3700 Motor 76.0 Power KW

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C +:

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

Tolerance bar +-:

: 1 680 750 073 Test lines

Outside diameter : 6.00

2.00 x inside diameter: x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm 1400 Aneroid pressure

hPa 1200

Setting mm Tolerance mm +-: 0.1 Shutoff solenoid Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1400

Aneroid pressure

hPa 1200 Supply pomp

pressure bar 6.7 Tolerance bar +-: 0.3 Shutoff solenoid

Volt 12

# FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750 Aneroid pressure hPa 1200 Del. quantity cm3/1000 strokes : 51.0 Tolerance cm3/1000 str. +-:0.5Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 27.0 Tolerance cm3/1000 str. +-: 0.5

Shutoff solenoid 12 Volt Check tolerance cm3/1000s. 4.5

#### IDLE SETTING

Volt

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 str. +-: 2.0

Shutoff solenoid Volt 12

Spread	Aneroid pressure
cm3/1000 strokes : 6.0	hPa : 1200
Check tolerance cm3/1000s. : 6.5	Del. quantity cm3/1000 strokes : -1.0
-	Tolerance
]	cm3/1000 str. +-: 0.1  Shutoff solenoid
5,4,4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	Volt : 12
FULL-LOAD SPEED REGULATION	
Rated speed rpm : 2050 -	INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa : 1200 - Del. quantity -	TIMING DEVICE CHARACTERISTIC
cm3/1000 strokes : 40.0	
Tolerance - cm3/1000 str. +-: 2.0	Rated speed rpm : 1600 Aneroid pressure
Shutoff solenoid -	- hPa : 1200
Volt : 12 -	SV travel mm : 5.1
STARTING FUEL DELIVERY -	Tolerance mm +-: 0.3
Rated speed rpm : 100 -	- Check - tolerance mm +-: 0.7
Del. quantity	Shutoff solenoid
cm3/1000 strokes : 70.0 - Tolerance -	- Volt : 12
cm3/1000 str. +-: 25.0 Shutoff solenoid	Rated speed rpm : 1200
Volt : 12	Aneroid pressure hPa : 1200  SV travel mm : 1.6 Tolerance mm + : 0.3 Check
-	SV travel mm : 1.6
]	Tolerance mm + : 0.3
LOAD-DEPENDENT START OF DELIVERY SETTING	
351111/0	tolerance mm + : 0.7 Shutoff solenoid
DELIVERY DIFFERENCE	- Volt : 12
Rated speed rpm : 1400	- Rated speed rpm : 1900
Pressure hPa : 1200 - Del. quantity -	- Aneroid pressure - hPa : 1200
cm3/1000 strokes : -8.0	
Tolerance	SV travel mm : 5.7 Tolerance mm +-: 0.3
Shutoff solenoid	Check
Volt : 12	tolerance mm + : 0.7 Shutoff solenoid
PRESSURE DIFFERENCE -	- Volt : 12
Rated speed rpm : 1400	F SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure	Data damaged and 1000
hPa : 1200 - Del. quantity -	- Rated speed rpm : 1900 - Aneroid pressure
cm3/1000 strokes : -0.2	- hPa : 1200
Tolerance cm3/1000 str. +-: 0.1	- Supply pomp - pressure bar : 8.8
Shutoff solenoid - 12 - 12	- Tolerance bar +-: 0.3 - Shutoff solenoid
+	- Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	- Rated speed rpm : 700
Rated speed rpm : 1400	- nated speed (pill . 700 -
·	

Aneroid pressure hPa	•	1200		t	Rated speed rpm Aneroid pressure	:	2300
Supply pomp	•			1	hPa	:	1200
pressure bar	:	3.7		+	Del. quantity		
Tolerance bar +	:	0.3	-	†	cm3/1000 strokes	:	1.5
Shutoff solenoid Volt	:	12	•	‡	Tolerance cm3/1000 str. ←	:	1.5
OVERFLOW QUANTITY			•	†	Check tolerance cm3/1000s. +-	:	1.5
Datad annad man		1000	-	†	Shutoff solenoid		40
Rated speed rpm Aneroid pressure	: '	1900	•	Ŧ	Volt	:	12
hPa Overfley symptity	:	1200	•	t	Rated speed rpm	:	800
Overflow quantity ccm/10s	:	152.7		Ŧ	Aneroid pressure hPa	:	500
Tolerance +-	•	41.6	•	Ī	LDA/		
	•	41.0	_	I	HBA stroke mm	•	4.7
Check tolerance			•	∔	Del. quantity	•	• • • •
ccm/10s +-	:	41.6		+	cm3/1000 strokes	:	42.0
Shutoff solenoid			-	+	Tolerance		
Volt	:	12	•	†	cm3/1000 str. +-	:	0.5
Dated aread nom		700	•	†	Check tolerance		3.5
Rated speed rpm Aneroid pressure	:	700	•	Ī	cm3/1000s. +- Shutoff solenoid	:	٥.٥
hPa	:	1200		1	Volt	:	12
Overflow quantity			-	+		•	
ccm/10s	:	117.1	-	+	Rated speed rpm	:	1900
Tolerance			-	t	Aneroid pressure		
ccm/10s +-	:	22.2	•	†	hPa	:	1200
Check tolerance			-	†	Del. quantity cm3/1000 strokes		50.0
ccm/10s +-	•	22.2		Ī	Tolerance	:	50.0
Shutoff solenoid	•	LC • L		1	cm3/1000 str. +-	:	2.5
Volt	:	12	-	1	Check tolerance	•	217
			-	+	cm3/1000s. +-	:	3.5
DELIVERY AND BREAK	CAWAY	CHARACTERIST	TIC -	t	Shutoff solenoid		
Banad anned me		or Ero	-	t	Volt	:	12
Rated speed rpm Aneroid pressure	: 7	2050	-	Ī	Rated speed rpm		800
hPa	•	1200	-	I	Del. quantity	•	000
Del. quantity	•	. 200	-	1	cm3/1000 strokes	:	30.0
cm3/1000 strokes	:	40.0	-	}	Tolerance		
Tolerance		2.0	-	t	cm3/1C00 str. ←	:	2.5
cm3/1000 str. +- Check tolerance	:	2.0	-	†	Check tolerance		3.5
cm3/1000s. +-	•	4.5	-	Ι	cm3/1000s. +- Shutoff solenoid	•	3.3
Shutoff solenoid	•	7.2	-	I	Volt	:	12
Volt	:	12	-	1			'-
			-	+	Rated speed rpm	:	1000
Rated speed rpm	: 2	2150	-	t	Aneroid pressure		4000
Aneroid pressure	_	1200	-	t	hPa	:	1200
hPa Del. quantity	:	1200	-	Ī	Del. quantity cm3/1000 strokes		50.5
cm3/1000 strokes	•	21.0	-	I	Tolerance	•	ر. ن
Check tolerance	•	-· <b>, -</b>		-	cm3/1000 str. +-	:	2.5
cm3/1000s. +-	:	6.0	•	t	Check tolerance		
Shutoff solenoid		42	-	t	cm3/1000s. +-	:	4.0
Volt	:	12	-	İ	Shutoff solenoid Volt		12
			•	Г	VOCE	•	12

	Poted aread 250
Rated speed rpm : 700	+ Rated speed rpm : 250 + Del. quantity
Aneroid pressure	- cm3/1000 strokes : 35.0
hPa : 1200	+ Tolerance
Del. quantity	+ cm3/1000 str. + : 5.0
cm3/1000 strokes : 54.0	- Check tolerance
Tolerance	+ cm3/1000s. $+$ : 6.0
cm3/1000 str. +: 4.5	+ Shutoff solenoid
Check tolerance	† Volt : 12
cm3/1000s. + : 5.5 Shutoff solenoid	†
Volt : 12	Ī
. 12	$\overline{oldsymbol{\perp}}$
Rated speed rpm : 1750	
Aneroid pressure	+ CHECKING LOAD-DEPENDENT
hPa : 1200	+ START OF DELIVERY
Del quantity	+
cm3/1000 strokes : 51.0	+ DELIVERY DIFFERENCE
Tolerance cm3/1000 str. ← : 0.5	Rated speed rpm : 1400
Check tolerance	+ Rated speed rpm : 1400 + Aneroid pressure
cm3/1000s. +-: 3.5	hPa : 1200
Shutoff solenoid	+ Del. quantity
Volt : 12	+ cm3/1000 strokes : -12.0
	+ Tolerance
	+ cm3/1000 str. +-: 3.0
ELECTR CHURCE	+ Check tolerance
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
CONTROL LEVER, IDEL STOP	Volt : 12
Rated speed rpm : 300	+
Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5	+
Tolerance	+ Rated speed rpm : 1400
cm3/1000 str. +: 1.5	+ Aneroid pressure
Check tolerance cm3/1000s. + : 1.5	+ hPa : 1200 + Del. quantity
CIID/ 10003.	+ cm3/1000 strokes : -1,0
FULL-LOAD STOP CONTROL LEVER	Tolerance
	+ cm3/1000 str. + : 0.1
Rated speed rpm : 300	+ Check tolerance
Del. quantity	+ cm3/1000s. $+-$ : 0.1
cm3/1000 strokes : 1.5	+ Shutoff solenoid
Tolerance cm3/1900 str. +-: 1.5	+ Volt : 12
Check tolerance	DELIVERY DIFFERENCE
cm3/1000s. +-: 1.5	T DECIVERY DIFFERENCE
	+ Rated speed rpm : 1400
IDLE DELIVERY	+ Aneroid pressure
	+ hPa : 1200
Rated speed rpm : 450	+ Del. quantity
Del. quantity	- cm3/1000 strokes : 1.5
cm3/1000 strokes : 1.5 Tolerance	+ Tolerance + cm3/1000 str. + : 1.5
cm3/1000 str. +-: 1.5	Check tolerance
Check tolerance	- cm3/1000s. +-: 1.5
	1 00001
$cm3/1000s$ . $\leftarrow$ : 1.5	Shutoff solenoid
Shutoff solenoid	+ Shutoff solenoid + Volt : 12

Tolerance mm Check tolerance mm Shutoff soleno Volt	: 1200 +: 0.4 +: 0.4 id : 12
START TRANSITI	ON
Rated speed rp Del. quantity cm3/1000 strok Tolerance cm3/1000 str. Shutoff soleno Volt	es : 23.0 +-: 4.0
Rated speed rp Del. quantity cm3/1000 strok Tolerance cm3/1000 str. Shutoff soleno Volt	es : 80.0 +- : 25.0
ASSEMBLY AND A	DJUSTMENT DIMENSIONS
LDA/ HBA stroke mm Dimension K mm Tolerance mm	: 4.7 : 3,3 +-: +-0,1 m : -
Dimension Kr m MS1 dimension Tolerance mm KSB travel mm	<del>+ : +0,15/-0,1</del>
MS1 dimension Tolerance mm	+ : +0,15/-0,1 : 10,0
MS1 dimension Tolerance mm KSB travel mm	+ : +0,15/-0,1 : 10,0 POSITION

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## Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.03.95 Test oil : ISO 4113

Part no. : 0 460 484 067 Pump designation : VE4/8F2300R537

Customer-spec. information
Customer : FIAT-AUTO
Motor : M708 HT 17.D
Power KW : 53.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35Tolerance bar  $\leftarrow$  : 0.05

Test nazzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

## REMARKS

INJECTION PUMP SETTING VALUES

## TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.1
Tolerance mm + : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

KSB/AFB Volt

Rated speed rpm : 1500
Anaroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.5
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm : 1500 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 41.5 Tolerance  $cm3/1000 str. \leftarrow :$ Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 2.5 Shutoff solenoid 12 Volt KSB/AFB Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750 Del. quantity cm3/1000 strokes : 28.5 Tolerance cm3/1000 str. +-:0.5 Shutoff solenoid Volt 12 Check tolerance cm3/1000s.2.5 KSB/AFB Volt 12

Rated speed rpm : 450 4	
Del. quantity	- KSB/AFB Volt : 12
cm3/1000 strokes : 12.0	NOD/APD VOCC . 12
Tolerance	- Rated speed rpm : 1000
cm3/1000 str. +: 2.0	- Aneroid pressure
Shutoff solenoid	- hPa : 1000
Volt : 12 - Spread	- SV travel mm : 1.4
cm3/1000 strokes : 2.5	Tolerance mm + : 0.3
Check tolerance	- Check
cm3/1000s. : 2.5	tolerance mm +-: 0.6
t	Shutoff solenoid
KSB/AFB Volt : 12	- Volt : 12
I	- - KSB/AFB Volt : 12
4	NOBPATO FOCE . IE
+	- Rated speed rpm : 400
FULL-LOAD SPEED REGULATION	- Aneroid pressure
Rated speed rpm : 2500	- hPa : 1000
Rated speed rpm : 2500 + Pressure hPa : 1000 +	- SV travel mm : 1.5
Del. quantity	- Tolerance mm + : 1.0
cm3/1000 strokes : 30.5	- Check
Tolerance +	tolerance mm + : 1.3
cm3/1000 str. +-: 2.0 + Shutoff solenoid +-	- Shutoff solenoid - Volt : 12
Volt : 12	. 12
1	Rated speed rpm : 1100
KSB/AFB Volt : 12	- Aneroid pressure
STARTING FUEL DELIVERY	hPa : 1000
STARTING FOEL DELIVERT	· · SV travel mm : 3.0
Rated speed rpm : 100	- Tolerance mm +-: 1.0
Del. quantity	- Check
cm3/1000 strokes : 47.0 +	tolerance mm + : 1.7
Tolerance + : 12.0 +	- Shutoff solenoid - Volt : 12
Shutoff solenoid	
Volt : 12	- Rated speed rpm : 2300
+	- Aneroid pressure
KSB/AFB Volt : 12	hPa : 1000
1	· · SV travel mm : 8.2
Ţ	Tolerance mm + : 0.3
+	Check
THURSTIAN CHAN TECT OFFICE CATTONIO	tolerance mm + : 0.6
INJECTION—PUMP TEST SPECIFICATIONS	- Shutoff solenoid - Volt : 12
TIMING DEVICE CHARACTERISTIC	. 12
	KSB/AFB Volt : 12
Rated speed rpm : 2000	CURRY V RUMP PRESCUES SUCCESSES
Aneroid pressure + 1000 + 1000	SUPPLY PUMP PRESSURE CHARACTERISTIC
. 1000	Rated speed rpm : 2300
SV travel mm : 6.8	Aneroid pressure
Tolerance mm +-: 0.3	hPa : 1000
Check	Supply pomp
tolerance mm +-: 0.6 +- Shutoff solenoid +	pressure bar : 7.6 Tolerance bar +-: 0.3
Volt : 12	. Occidince bai
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Shutoff solenoid Volt	: 12	=	KSB/AFB Volt	:	12
KSB/AFB Volt	: 12	1	Rated speed rpm	:	2700
Rated speed rpm Aneroid pressure	: 1000		Aneroid pressure hPa Del. quantity	:	1000
hPa Supply pomp	: 1000		cm3/1000 strokes Check tolerance	:	10.5
pressure bar Tolerance bar	: 4.2 : 0.3	<u>.</u>	cm3/1000s. +- Shuboff solenoid	:	5.0
Shutoff solenoid Volt	: 12	•	Volt	:	12
KSB/AFB Volt	: 12	- -	KSB/AFB Volt	:	12
OVERFLOW QUANTITY		-	Rated speed rpm Aneroid pressure	:	2900
Rated speed rpm		-	hPa Del. quantity	:	1000
Overflow quantity ccm/10s Tolerance	: 63.8	1	cm3/1000 strokes Tolerance		1.5
ccm/10s +-	: 22.2	1	cm3/1000 str. +- Check tolerance cm3/1000s. +-		1.5 1.5
Check tolerance	: 22.2		Shutoff solenoid Volt	•	12
Shutoff sclenoid Volt	: 12	-	KSB/AFB Volt	:	12
KSB/AFB Volt	: 12	-	Rated speed rpm	:	1100
Rated speed rpm	: 2300	1	Aneroid pressure hPa	:	350
Aneroid pressure	: 1000	<del>-</del>	LDA/		
Overflow quantity ccm/10s	: 97.2		HBA stroke mm Del. quantity	:	5.1
Tolerance ccm/10s +-	: 41.5	1	cm3/1000 strokes Tolerance cm3/1000 str. +-		35.5 0.5
Check tolerance	: 41.6		Check tolerance cm3/1000s. +-	·	2.5
Shutoff solenoid	: 12		Shutoff solenoid	:	12
KSB/AFB Volt	: 12	-	KSB/AFB Volt	:	12
DELIVERY AND BREAK	KAWAY CHARAC	TERISTIC -	Rated speed rpm	:	2300
Rated speed rpm	: 2500	+	- Aneroid pressure - hPa	:	1000
Aneroid pressure hPa	: 1000	†	- Del. quantity - cm3/1000 strokes - Tolerance	:	41.5
Del. quantity cm3/1000 strokes Tolerance	: 30.5		cm3/1000 str. +- Check tolerance	:	1.0
cm3/1000 str. +- Check tolerance	: 2.0		cm3/1000s. +- Shutoff solenoid	:	2.3
cm3/1000s. +- Shutoff solenoid	: 5.0	1	- Volt	:	12
Volt	: 12	+	KSB/AFB Volt	:	12

Rated speed rpm :	1100		el. quantity	
Del. quantity cm3/1000 strokes :	<b>30.</b> 5		m3/1000 strokes olerance	: 1.5
Tolerance	50.7		m3/1000 str. +-	: 1.5
cm3/1000 str. + :	1.5	+ c1	heck tolerance	
Check tolerance	2 5		m3/1000s.	: 1.5
cm3/1000s. +-: Shutoff solenoid	2.5		hutoff solenoid	: 12
Volt :	12	I	olt	; 12
		↓ κ:	SB/AFB Volt	: 12
KSB/AFB Volt :	12	+ _		
Rated speed rpm :	750		ated speed rpm el. quantity	: 400
Aneroid pressure	750		m3/1000 strokes	: 23.0
hPa :	1000		olerance	
Del. quantity	/A m		m3/1000 str. +	: 2.5
cm3/1000 strokes : Tolerance	40.5		hutoff solenoid olt	: 12
cm3/1000 str. +-:	1.5	I "		• 16
Check tolerance		+ K	SB/AFB Volt	: 12
cm3/1000s. +-:	2.5	+		
Shutoff salenoid Volt :	12	1		
	·•	1		
KSB/AFB Volt :	12	+		
Rated speed rpm :	1500	† F	XHAUST-GAS RECIRC	THE ATTON
Aneroid pressure		1	MINOCH GNO RECENT	OCATION
hPa :	1000		ated speed rpm	: 1100
Del. quantity cm3/1000 strokes :	41.5		neroid pressure Pa	. 1000
Tolerance	41.2		ra el. quantity	: 1000
cm3/1000 str. +-:	<b>0.</b> 5		m3/1000 strokes	: 20.0
Check tolerance	2.2		olerance	
cm3/1000s. +-: Shutoff solenoid	2.0		m3/1000 str. +- heck tolerance	: 1.0
Volt :	12		m3/1000s. +-	: 2.5
			hutoff solenoid	
		+ v	olt	: 12
ELECTR. SHUTOFF		Į KS	SB/AFB Volt	: 12
CONTROL LEVER, IDLE	STOP	+		
Rated speed rpm :	/·50	† s1	TART TRANSITION	
Del. quantity	4JU	I R	ated speed rpm	: 600
cm3/1000 strokes :	1.5	+ De	el. quantity	
Tolerance	4 5	1	m3/1000 strokes	: 24.0
cm3/1000 str. + : Check tolerance	1.5		olerance m3/1000 str. +-	: 10.0
cm3/1000s. +-:	1.5		hutoff solenoid	. 10.0
Spread			olt	: 12
cm3/1000 strokes :	5.0	1 ~	SB/AFB Volt	: 12
KSB/AFB Volt :	12	Į ~	SO/AFB VOLL	. 12
	· <del>-</del>	+		
TALE AELTHEAU			ated speed rpm	: 300
IDLE DELIVERY		1 06	el. quantity m3/1000 strokes	· 47 n
Rated speed rpm :	550		olerance	· +1.0
. ,		+ cu	m3/1000 str. +-	: 10.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.1

Dimension K mm : 3,3

Tolerance mm + : +0,1

Dimension KF mm : 5,4

Tolerance mm +-:+-0.2

Dimension MS mm : 1,4

Tolerance mm + : +-0,2

## POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 3,32

MICROSWITCH

SET

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 43,9..52,5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95 Test oil : ISO 4113

Part no. : 0 460 484 083 Pump designation : VE4/8F2300R537-1

Customer—spec. information
Customer : FIAT—AUTO
Motor : M708 HT 17.D
Power KW : 53.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.4
Tolerance mm +- : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.8
Tolerance bar +- : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500 Aneroid pressure 1000 Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000S.2.5 Shutoff solenoid Volt 12 KSB/AFB Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 31.5 Tolerance cm3/1000 str. +-:0.5 Shutoff solenoid Volt 12 Check tolerance cm3/1000s. 2.5 KSB/AFB Volt 12 :

Rated speed rpm	: 450	1
Del. quantity cm3/1000 strokes		KSB/AFB Volt : 12
Tolerance cm3/1000 str. +-	_	Rated speed rpm : 1000
Shutoff solenoid		+ Aneroid pressure + hPa : 1000
Volt Spread	: 12	SV travel mm : 1.5
cm3/1000 strokes Check tolerance	: 2.5	Tolerance mm +-: 0.3 Check
cm3/1009s.	2.5	tolerance mm +-: 0.6 Shutoff solenoid
KSB/AFB Volt	: 12	+ Volt : 12 +
		+ KSB/AFB Volt : 12
FULL-LOAD SPEED R	EGULATION	Rated speed rpm : 450 Aneroid pressure
Dadad ana al	. 2500	† hPa : 1000
Rated speed rpm Pressure hPa	: 2500 : 1000	SV travel mm : 1.5
Del. quantity	. 1000	Tolerance rum +-: 1.0
cm3/1000 strokes	: 32.5	Check
Tolerance		tolerance mm + : 1.3
cm3/1000 str. +-	: 2.0	+ Shutoff solenoid
Shutoff solenoid Volt	: 12	+ Volt : 12
KSB/AFB Volt	: 12	+ Rated speed rpm : 1100 + Aneroid pressure
STARTING FUEL DEL	IVFRY	† hPa : 1000
OTANTINO FOLL DEL	2.4.0	SV travel mm : 3.0
Rated speed rpm Del. quantity	: 100	Tolerance mm +-: 1.0 + Check
cm3/1000 strokes Tolerance	: 47.0	tolerance mm +-: 1.7 Shutoff solenoid
cm3/1000 str. +- Shutoff solenoid	: 12.0	Volt : 12
Volt	: 12	Rated speed rpm : 2300 Aneroid pressure
KSB/AFB Volt	: 12	hPa : 1000
		SV travel mm : 7.8
		Tolerance mm +-: 0.3 Check
INJECTION-PUMP TE	ST SPECTETCATTONS	
		Volt : 12
TIMING DEVICE CHA		KSB/AFB Volt : 12
Rated speed rpm Aneroid pressure		+ SUPPLY PUMP PRESSURE CHARACTERISTIC
hPa	: 1000	+
SV travel mm	: 7.0	+ Rated speed rpm : 2300 + Aneroid pressure
Tolerance mm +- Check	: 0.3	hPa : 1000 + Supply pomp
tolerance mm +- Shutoff solenoid		pressure bar : 8.1 Tolerance bar +-: 0.3
Volt	: 12	+

Shutoff solenoid	4.0	+			
Volt	: 12	†	- KSB/AFB Volt	:	12
KSB/AFB Volt	: 12	†	Poted anded non		2700
KODIAID VOLL	. 12	]	<ul> <li>Rated speed rpm</li> <li>Aneroid pressure</li> </ul>	:	2700
Rated speed rpm	: 1000	4	- hPa	:	1000
Aneroid pressure		4	- Del. quantity		
hPa	: 1000	+	cm3/1000 strokes	:	12.5
Supply pomp	. / 3	†	- Check tolerance		<b>.</b> 0
pressure bar Tolerance bar +-	: 4.2 : 0.3		- cm3/1000s. +- - Snutoff solenoid	`:	5.0
Shutoff solenoid	. 0.5	1	- Volt	:	12
Volt	: 12	4	-	·	
		+	- KSB/AFB Volt	:	12
KSB/AFB Volt	: 12	†	Part and a second		2000
OVERFLOW QUANTITY	,	1	<ul> <li>Rated speed rpm</li> <li>Aneroid pressure</li> </ul>	:	2900
OVERTICON GOARTITT		]	- hPa	•	1000
Rated speed rpm	: 750	4	- Del. quantity	•	1000
Overflow quantity		+	cm3/1000 strokes	:	1.5
ccm/10s	: 63.8	+	Tolerance		4 =
Tolerance +-	: 22.2	1	- cm3/1000 str. +- - Check tolerance	- :	1.5
CCIII/ 105	. 26.2	I	- cm3/1000s. +-		1.5
Check tolerance		4	- Shutoff solenoid	•	,,,
ccm/10s +-	22.2	+	- Volt	:	12
Shutoff salenaid	. 43		- Kondaro III		40
Volt	: 12	1	- KSB/AFB Volt	:	12
KSB/AFB Volt	: 12	1	- Rated speed rpm	:	1100
		4	- Aneroid pressure	•	
Rated speed rpm	: 2300	+	- hPa	:	350
Aneroid pressure hPa	: 1000	†	- - LDA/		
Overflow quantity		I	- HBA stroke mm		5.1
ccm/10s	: 97.2		Del. quantity	•	2.1
Tolerance		+	cm3/1000 strokes	:	39.0
ccm/10s +-	: 41.6	†	- Tolerance		
Check tolerance		1	- cm3/1000 str. +- - Check tolerance	- :	0.5
ccm/10s +-	: 41.6	I	- cm3/1000s. +-	. :	2.5
Shutoff solenoid		4	- Shutoff solenoid	•	
Volt	: 12	+	- Volt	:	12
KSB/AFB Volt	: 12	†	- - KSB/AFB Volt		12
NOD/APD VOLL	. 12	1	- KOB/AFB VOLT	:	12
DELIVERY AND BREA	KAWAY CHARAC	TERISTIC +	- Rated speed rpm	:	2300
		+	- Aneroid pressure		
Rated speed rpm	: 2500	†	- hPa	:	1000
Aneroid pressure hPa	: 1000	1	- Del. quantity - cm3/1000 strokes		40.5
Del. quantity	. 1000	1	- Tolerance	•	40.7
cm3/1000 strokes	: 32.5	+	- cm3/1000 str. +-	· :	1.0
Tolerance		†	- Check tolerance		^ ~
cm3/1000 str. +- Check tolerance	: 2.0	†	- cm3/1000S. +- - Shutoff solenoid	- :	2.3
cm3/1000s. +-	: 5.0	I	- Volt	:	12
Shutoff solenoid		+	<u>-</u>	_	•
Volt	: 12	+	- KSB/AFB Volt	:	12
		+	-		

Rated speed rpm :	: 1100	) +	Tolerance			
Del. quantity		+	cm3/1000 str. +-	:	1.5	
cm3/1000 strokes	31	1.5	Spread			
Tolerance		1	cm3/1000 strokes		5.0	
cm3/1000 str. +	. 4	1.5	Check tolerance	•	٥.0	
		•••			4 1-	
Check tolerance	_	. <u> </u>	cm3/1000S. ←	:	1.5	
cm3/1000s. +- :	: 2	2.5	Spread			
Shutoff solenoid		+	cm3/1000 strokes	:	5.0	
Volt	•	12				
		1	IDLE DELIVERY			
KSB/AFB Volt	•	12	TOLL DELIVERY			
NOD/AFD VOLL	•	16	Datad was down		550	
	7	<u> </u>	Rated speed rpm	:	550	
	: 750	·	Del. quantity			
Aneroid pressure		+	cm3/1000 strokes	:	1.5	
hPa :	: 10	000 +	Tolerance			
Del. quantity		1	cm3/1000 str. +-		1.5	
cm3/1000 strokes		1.5		•	(•)	
	. 4	·· · · · · · · · · · · · · · · · · · ·	Check tolerance		4 -	
Tolerance			cm3/1000s. +-	:	1.5	
cm3/1000 str. +-:	: 7	1.5	Shutoff solenoid			
Check tolerance		+	Volt	:	12	
cm3/1000s. +-:	: 2	2.5				
Shutoff solenoid	_	1	KSB/AFB Volt	:	12	
Volt	•	12	NODINIO VOCE	•	'-	
voct .	•	'- T	Datad aread are	_	400	
1/0D / 1/0D   1/1   1/2		12	Rated speed rpm	:	400	
KSB/AFB Volt	:	12 +	Del. quantity			
		+	cm3/1000 strokes	:	21.0	
Rated speed rpm :	1500	) +	Tolerance			
Aneroid pressure		+	cm3/1000 str. +-	:	2.5	
hPa	. 10	000	Shutoff solenoid	•	_,,	
		700				
		1			12	
Del. quantity		+	Volt	:	12	
Del. quantity cm3/1000 strokes		1.5	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance	: 41	+		:	12 12	
Del. quantity cm3/1000 strokes	: 41	0.5	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance	: 41	+	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +- : Check tolerance	: 41 : (	0.5	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	: 41 : (	+	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	: 41 : 0	2.0	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	: 41 : (	0.5	Volt	:		
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	: 41 : 0	2.0	Volt KSB/AFB Volt	:	12	
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid	: 41 : 0	2.0	Volt	: :	12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt	: 41 : 0	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRC		12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF	: 41 : (	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRC	:	12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt	: 41 : (	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure	:	12 TION 1100	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF	: 41 : (	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRC	:	12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE	: 41 : 0 : 2	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRO  Rated speed rpm Aneroid pressure hPa	:	12 TION 1100	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm :	: 41 : 0 : 2	2.0	Volt  KSB/AFB Volt  EXHAUST-GAS RECIRO  Rated speed rpm Aneroid pressure hPa Del. quantity	:	12 FION 1100 1000	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity	: 41 : 0 : 2 : 3 : 450	2.0	EXHAUST-GAS RECIRO Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	:	12 FION 1100 1000	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes :	: 41 : 0 : 2 : 3 : 450	2.0	EXHAUST-GAS RECIRO Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: :	12 FION 1100 1000 20.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 41 : 0 : 2 : 3 : 450 : 450	2.0	EXHAUST-GAS RECIRC Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: :	12 FION 1100 1000 20.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + :	: 41 : 0 : 2 : 3 : 450 : 450	2.0	EXHAUST-GAS RECIRC Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	12 FION 1100 1000 20.0 1.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance	: 41 : 0 : 2 : 3 : 450 : 1	2.0	EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	12 FION 1100 1000 20.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + :	: 41 : 0 : 2 : 3 : 450 : 1	2.0	EXHAUST-GAS RECIRC Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	:	12 FION 1100 1000 20.0 1.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	: 41 : 0 : 2 : 3 : 450 : 1	2.0	EXHAUST-GAS RECIRO  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	:	12 TION 1100 1000 20.0 1.0 2.5	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread	STOP 450	2.0	EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	:	12 FION 1100 1000 20.0 1.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	STOP 450	2.0	EXHAUST-GAS RECIRO Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes:	## 41	1.5 1.5 1.5 1.5 1.5	EXHAUST-GAS RECIRO  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	12 TION 1100 1000 20.0 1.0 2.5	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread	## 41	2.0	KSB/AFB Volt  KSB/AFB Volt  EXHAUST-GAS RECIRO  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes: KSB/AFB Volt	## 41	2.0 12 1.5 1.5 1.5 1.5	EXHAUST-GAS RECIRO Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes:	## 41	2.0 12 1.5 1.5 1.5 1.5	EXHAUST-GAS RECIRCA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes: KSB/AFB Volt	## 41	2.0 12 1.5 1.5 1.5 1.5	EXHAUST-GAS RECIRCA Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes: KSB/AFB Volt  FULL-LOAD STOP CONT	## 41	2.0 12 1.5 1.5 1.5 1.5 1.5	KSB/AFB Volt  EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes: KSB/AFB Volt  FULL-LOAD STOP CONTRATED	## 41	2.0 12 1.5 1.5 1.5 1.5 1.5	KSB/AFB Volt  EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12 12	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt  ELECTR. SHUTOFF CONTROL LEVER, IDLE Rated speed rpm Del. quantity cm3/1000 strokes: Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Spread cm3/1000 strokes: KSB/AFB Volt  FULL-LOAD STOP CONT	### 41	2.0 12 1.5 1.5 1.5 1.5 1.5	KSB/AFB Volt  EXHAUST-GAS RECIRC  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	12 FION 1100 1000 20.0 1.0 2.5 12 12	

Tolerance cm3/1000 str. +-: 10.0 Shutoff solenoid Volt 12 KSB/AFB Volt 12 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 47.0 Tolerance cm3/1000 str. ←: 10.0 Shutoff solenoid Volt 12 KSB/AFB Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ 5.1 HBA stroke mm Dimension K mm : 3,3 Tolerance mm +: +-0,1 Dimension KF mm : 5,4 Tolerance mm +: +0,2 Dimension MS mm : 1,4 Tolerance mm + : + 0,2POTENTIOMETER SET 1. measurement voltage Volt : 1=3,32 V MICROSWITCH SET : 1=ARF 12,0 CONTROL LEVER POSITION SET Control lever position YA mm : 37,2..39,2 Control lever : 43,9..52,5 position YB mm End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95 Test oil : ISO 4113

Part no. : 0 460 484 068 Pump designation : VE4/8F2300R538

Customer-spec. information Customer : FIAT-AUTO Motor : M708 HT 17.L Power KW : 53.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

**Overflow** 

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.1
Tolerance mm +-: 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 5.5
Tolerance bar + : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500 Aneroid pressure 1000 hPa Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 2.5 Shutoff solenoid Volt 12 KSB/AFB Volt 12

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 28.5 Tolerance cm3/1000 str. + :0.5 Shutoff solenoid 12 Volt Check tolerance cm3/1000s. 2.5 KSB/AFB Volt 12 :

Rated speed rpm : 450	
Rated speed rpm : 450 Del. quantity	+ KSB/AFB Volt : 12
cm3/1000 strokes : 12.0	I NOB/AFB VOLL . 12
Tolerance	Rated speed rpm : 1000
cm3/1000 str. + : 2.0	+ Aneroid pressure
Shutoff solenoid	+ hPa : 1000
Volt : 12	+
Spread	+ SV travel mm : 1.4
cm3/1000 strokes : 2.5	+ Tolerance mm +-: 0.3
Check tolerance	+ Check
cm3/1000s. : 2.5	tolerance num +: 0.6
KSB/AFB Volt : 12	+ Shutoff solenoid + Volt : 12
KSB/AFB VOLL . 12	I vol. : 12
	KSB/AFB Volt : 12
	TODATO VOCE . TE
	A Rated speed rpm : 400
FULL-LOAD SPEED REGULATION	+ Aneroid pressure
	† hPa : 1000
Rated speed rpm : 2500	+
Pressure hPa : 1000	+ SV travel mm : 1.5
Del. quantity cm3/1000 strokes : 30.5	Tolerance mm +-: 1.0
Tolerance	+ Check + tolerance mm +-: 1.3
cm3/1000 str. +-: 2.0	Shutoff solenoid
Shutoff solenoid	+ Volt : 12
Volt : 12	+
	Rated speed rpm : 1100
KSB/AFB Volt : 12	+ Aneroid pressure
ATADTANA PUPI BELTUEDU	† hPa : 1000
STARTING FUEL DELIVERY	† Sty Americal Company
Rated speed rpm : 100	+ SV travel mm : 3.0 + Tolerance mm + : 1.0
Del. quantity	+ Check
cm3/1000 strokes : 47.0	tolerance mm +-: 1.7
Tolerance	+ Shutoff solenoid
cm3/1000 str. +-: 12.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 2300
KSB/AFB Volt : 12	Aneroid pressure
KSB/AFB Volt : 12	hPa : 1000
	SV travel nam : 8.2
	+ Tolerance mm +-: 0.3
	+ Check
	tolerance mm + : 0.6
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
######################################	+ Volt : 12
TIMING DEVICE CHARACTERISTIC	+ KSB/AFB Volt : 12
Rated speed rpm : 2000	KSB/AFB Volt : 12
Aneroid pressure	SUPPLY PUMP PRESSURE CHARACTERISTIC
hPa : 1000	- CONTENT OF THE CONT
	Rated speed rpm : 2300
SV travel mm : 6.8	+ Aneroid pressure
Tolerance mm +-: 0.3	hPa : 1000
Check	Supply pomp
tolerance mm +: 0.6	pressure bar : 7.6
Shutoff solenoid Volt : 12	Tolerance bar + : 0.3
· 12	Т

Shutoff solenoid Volt	: 12	-	+ + KSB/AFB Volt	: 12
	_	-	+	
KSB/AFB Volt	: 12	-	Rated speed rpm Aneroid pressure	: 2700
Rated speed rpm Aneroid pressure	: 1000	-	+ hPa + Del. quantity	: 1000
hPa	: 1000	-	cm3/1000 strokes	: 10.5
Supply pomp pressure bar	: 4.2	-	Check tolerance cm3/1000s. +-	: 5.0
Tolerance bar +- Shutoff solenoid	: 0.3	-	Shutoff solenoid Volt	: 12
Volt	: 12	-	+	
KSB/AFB Volt	: 12	-	+	: 12
OVERFLOW QUANTITY		-	Rated speed rpm Aneroid pressure	: 2900
Rated speed rpm	: 750	-	hPa Del. quantity	: 1000
Overflow quantity		-	cm3/1000 strokes	: 1.5
ccm/10s Tolerance	: 63.8	-	Tolerance cm3/1000 str. +-	: 1.5
ccm/10s +-	: 22.2	3	Check tolerance	: 1.5
Check tolerance ccm/10s +-	. 22.2	-	Shutoff solenoid	
Shutoff solenoid	: 22.2	-	+ Volt	: 12
Volt	: 12	-	+ KSB/AFB Volt	: 12
KSB/AFB Volt	: 12	-	Rated speed rpm Aneroid pressure	: 1100
	: 2300	-	hPa	: 350
Aneroid pressure hPa	: 1000	-	LDA/	
Overflow quantity ccm/10s	: 97.2	- -	HBA stroke mm Del. quantity	: 5.1
Tolerance ccm/10s +-		-	cm3/1000 strokes Tolerance	35.5
	: 41.6	7	cm3/1000 str. +-	: 0.5
Check tolerance ccm/10s +	: 41.6	7	+ Check tolerance + cm3/1000s. +-	: 2.5
Shutoff solenoid Volt	: 12	-	Shutoff solenoid Volt	: 12
		-	<del>}</del>	
KSB/AFB Volt	: 12		KSB/AFB Volt	: 12
DELIVERY AND BREAK	(AWAY CHARAC	TERISTIC -	Rated speed rpm Aneroid pressure	: 2300
Rated speed rpm Aneroid pressure	: 2500	-	hPa Del. quantity	: 1000
hPa	: 1000	-	cm3/1000 strokes	: 41.5
Del. quantity cm3/1 <b>000</b> strokes	: 30.5	-	Tolerance cm3/1000 str. +-	: 1.0
Tolerance cm3/1000 str. +-	: 2.0	4	Check tolerance +-	: 2.3
Check tolerance cm3/1000s. +-		-	Shutoff solenoid Volt	: 12
Shutoff solenoid			+	
Volt	: 12	7	KSB/AFB Volt	: 12

	4400	
Rated speed rpm :	1100	Del. quantity
Del. quantity		cm3/1000 strokes : 1.5
cm3/1000 strokes :	30.5	Tolerance
Tolerance		- cm3/1000 str. +- : 1.5
cm3/1000 str. +-:	1.5	- Check tolerance
Check tolerance	-	- cm3/1000s. +-: 1.5
cm3/1000s. +-:	2.5	- Shutoff solenoid
Shutoff solenoid	<del>-</del>	- Volt : 12
Volt :	12	
	· —	KSB/AFB Volt : 12
KSB/AFB Volt :	12	100//5
10271110 1011		Rated speed rpm : 400
Rated speed rpm :	750	Pel. quantity
Aneroid pressure	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	cm3/1000 strokes : 23.0
hPa :	1000	F Tolerance
Del. quantity	1000	cm3/1000 str. +-: 2.5
cm3/1000 strokes :	40.5	Shutoff solenoid
	40.5	
Tolerance	1.5	- Volt : 12
cm3/1000 str. +:	1.2	Kon/Arn Walt 42
Check tolerance	3.5	KSB/AFB Volt : 12
cm3/1000s. +-:	2.5	
Shutoff solenoid	42	<del>†</del>
Volt :	12	
	10	
KSB/AFB Volt :	12 -	<del> </del>
	4505	
Rated speed rpm :	1500	START TRANSITION
Aneroid pressure	4	<del> </del>
hPa :	1000	Rated speed rpm : 600
Del. quantity	<del>,</del>	Del. quantity
cm3/1000 strokes :	41.5	- cm3/1000 strokes : 24.0
Tolerance		- Tolarance
cm3/1000 str. + :	<b>0.</b> 5	- cm3/1000 str. +-: 10.0
Check tolerance	-	Shutoff solenoid
cm3/1000s. ←:	2.0	- Volt : 12
Shutoff solenoid	-	-
Volt :	12	KSB/AFB Volt : 12
	4	<b>}</b>
	-	-
		- Rated speed rpm : 300
ELECTR. SHUTOFF	-	- Del. quantity
CONTROL LEVER, IDLE	STOP	- cm3/1000 strokes : 47.0
•	<u>,</u>	Tolerance
Rated speed rpm :	450	- cm3/1000 str. +-: 10.0
Del. quantity	4	- Shutoff solenoid
cm3/1000 strokes :	1.5	- Volt : 12
Tolerance	4	· <del>-</del>
cm3/1000 str. +-:	1.5	KSB/AFB Volt : 12
Check tolerance	4	·· ·· - · · · · · · · · · · · · · · ·
cm3/1000s. +-:	1.5	
Spread	4	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes :	5.0	•
		-
KSB/AFB Volt :	12	- LDA/
		- HBA stroke mm : 5.1
	ز	Dimension K mm : 3,3
IDLE DELIVERY		- Tolerance mm +-: +-0,1
aree reelfell	]	Dimension KF mm : 5,4
Rated speed rpm :	550	Tolerance mm +-: +-0,2
naced speed (pill )	]	Dimension MS mm : 1,4
	٦	

Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

Control lever position YB mm : 43,9..52,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.08.95 Test oil : ISO 4113

Part no. : 0 460 484 084 Pump designation: VE4/8F2300R538-1

Customer-spec. information Customer : FIAT-AUTO Motor : M708 NT 17.L Power KW 53.0

## TEST BENCH REQUIREMENTS

## Calibrating-oil

return

temperature °C 45 Tolerance °C + :

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar  $\leftarrow$ : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar +-:

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter : x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Aneroid pressure hPa 1000 Setting mm 4.4 Tolerance mm +-: 0.1 Shutoff solenoid Volt 12 KSB/AFB Volt 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500 Aneroid pressure hPa 1000 Supply pomp pressure bar Tolerance bar + : 0.3 Shutoff solenoid Volt 12 KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

1500 Rated speed rpm : Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 41.5 Tolerance  $cm3/1000 str. \leftarrow :$ 0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 2.5 Shutoff solenoid Volt 12 KSB/AFB Volt

## FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

:

12

Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 31.5 Tolerance cm3/1000 str. + :Shutoff solenoid 12 Volt Check tolerance cm3/1000s. 2.5 KSB/AFB Volt : 12

Rated speed rpm : 450	4
Del. quantity	+ KSB/AFB Volt : 12
cm3/1000 strokes : 10.0	+
Tolerance cm3/1000 str. +-: 2.0	Rated speed rpm : 1000
Shutoff solenoid	Aneroid pressure hPa : 1000
Volt : 12	1,1000
Spread	SV travel mm : 1.5
cm3/1000 strokes : 2.5	+ Tolerance mm +: 0.3
Check tolerance cm3/1000s. : 2.5	tolerance mm +: 0.6
	+ Shutoff solenoid
KSB/AFB Volt : 12	+ Volt : 12
	WOD (AFD. 1921)
	KSB/AFB Volt : 12
	Rated speed rpm : 450
FULL-LOAD SPEED REGULATION	+ Aneroid pressure
D-A-d	+ hPa : 1000
Rated speed rpm : 2500 Pressure hPa : 1000	+ SV travel (mm : 1.5
Del. quantity	Tolerance mm +-: 1.0
cm3/1000 strokes : 32.5	+ Check
Tolerance	tolerance mm +: 1.3
cm3/1000 str. + : 2.0 Shutoff solenoid	+ Shutoff solenoid + Volt : 12
Volt : 12	1
	Rated speed rpm : 1100
KSB/AFB Volt : 12	+ Aneroid pressure
STARTING FUEL DELIVERY	hPa : 1000
CIANTENO FOLL DELETENT	+ SV travel mm : 3.0
Rated speed rpm : 100	Tolerance mm +-: 1.0
Del. quantity cm3/1000 strokes : 47.0	+ Check
cm3/1000 strokes : 47.0 Tolerance	+ tolerance mm + : 1.7 + Shutoff solenoid
cm3/1000 str. +-: 12.0	+ Volt : 12
Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 2300
KSB/AFB Volt : 12	+ Aneroid pressure + hPa : 1000
	+
	+ SV travel mm : 7.8
	+ Tolerance mm + : 0.3 + Check
	tolerance mm +-: 0.6
INJECTION-PUMP TEST SPECIFICATIONS	+ Shutoff solenoid
TYMING DELICE CUADACTEDICTIC	+ Volt : 12
TIMING DEVICE CHARACTERISTIC	+ KSB/AFB Volt : 12
Rated speed rpm : 2000	+
Aneroid pressure	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
hPa : 1000	+ Rated speed rpm : 2300
SV travel mm : 7.0	+ Rated speed rpm : 2300 + Ameroid pressure
Tolerance mm +-: 0.3	+ hPa : 1000
Check	+ Supply pomp
tolerance mm +: 0.6 Shutoff solenoid	+ pressure bar : 8.1 + Tolerance bar +-: 0.3
Volt : 12	T local alice par U.5
•	•

Shutoff solenoid Volt	: 12		† K	SB/AFB	Volt	:	12
KSB/AFB Volt	: 12				eed rpm	:	2700
Rated speed rpm	: 1000		+ hi	Pa	pressure	:	1000
Aneroid pressure hPa	: 1000		+ cı		strokes	:	12.5
Supply pomp pressure bar	: 4.2				lerance S. +-		5.0
Tolerance bar +-			+ s	hutoff	solenoid	•	
Shutoff solenoid Volt	: 12		+	olt		:	12
KSB/AFB Volt	: 12		+	SB/AFB		:	12
OVERFLOW QUANTITY			+         A₁	neroid	eed rpm pressure	:	2900
Rated speed rpm	: 750			Pa el. qua	ntity	:	1000
Overflow quantity			+ cı	m3/1000	strokes	:	1.5
ccm/1Üs Tolerance	: 63.8			oleranc m3/1000	e str. +−		1.5
ccm/10s +-	: 22.2		+ cı	heck to	lerance	•	
Check tolerance				m3/1000 butoff	S. +- solenoid	:	1.5
ccm/10s +- Shutoff solenoid	: 22.2		1	olt	30ccnord	:	12
Volt	: 12		<u> Т</u> к	SB/AFB	Volt	:	12
KSB/AFB Volt	: 12				eed rpm pressure	:	1100
Rated speed rpm Aneroid pressure	: 2300			Pa	pi essui e	:	350
hPa	: 1000		•	DA/	•		
Overflow quantity ccm/10s	: 97.2			BA stro el. qua		:	5.1
Tolerance			+ ci	m3/1000	strokes	:	39.0
ccm/10s +	: 41.6		+ cr	oleranc m3/1000	str. +-	:	0.5
Check tolerance ccm/10s +-	: 41.6			heck to m3/1000	lerance S. +-		2.5
Shutoff solenoid			+ si	hutoff	solenoid	•	
Volt	: 12		† V(	olt		:	12
KSB/AFB Volt	: 12		† К: +	SB/AFB	Volt	:	12
DELIVERY AND BREA	KAWAY CHARA	CTERISTIC			eed rpm oressure	:	2300
Rated speed rpm	: 2500			Pa	- <b>-</b>	:	1000
Aneroid pressure hPa	: 1000		<del>}</del> cr		strokes	:	40.5
Del. quantity cm3/1000 strokes	: 32.5		+ cr		str. +-	:	1.0
Tolerance cm3/1000 str. +-	: 2.0		+ cr	m3/1000		:	2.3
Check tolerance cm3/1000s. +-	: 5.0			hutoff: olt	solenoid	:	12
Shutoff solenoid			+		V-1+		
Volt	: 12		† K	SB/AFB	volt	:	12

Destant amount and	_	1100	,	<b>#.1</b>		
Rated speed rpm Del. quantity	•	1100	†	Tolerance cm3/1000 str. +-		1.5
cm3/1000 strokes		31.5	I	Spread	•	1.5
Tolerance	•	31.3	I	cm3/1000 strokes	•	5.0
cm3/1000 str. +-	:	1.5	1	Check tolerance	•	٥.0
Check tolerance	•		1	cm3/1000s. +-	:	1.5
cm3/1000s. +-	:	2.5	1	Spread	·	
Shutoff solenoid			+	cm3/1000 strokes	:	5.0
Volt	:	12	+			
			+	IDLE DELIVERY		
KSB/AFB Volt	:	12	†			550
Rated speed rpm	:	750	†		:	550
Aneroid pressure	•	7 50	I	Del. quantity cm3/1000 strokes		1.5
hPa	:	1000	1	Tolerance	•	1.5
Del. quantity	-		<b></b>	cm3/1000 str. +-	:	1.5
cm3/1000 strokes	:	41.5	+	Check tolerance		
Tolerance			+	cm3/1000s. +-	:	1.5
cm3/1000 str. +	:	1.5	+	Shutoff solenoid		
Check tolerance cm3/1000s. +-		2.5	†	Volt	:	12
cm3/1000s. +- Shutoff solenoid	•	2.5	Ī	KSB/AFB Volt		12
Volt	•	12	I	NOD/AFD VOCE	•	12
			1	Rated speed rpm	:	400
KSB/AFB Volt	:	12	+	Del. quantity		
		4500	+	cm3/1000 strokes	:	21.0
Rated speed rpm Aneroid pressure	:	1500	†	Tolerance cm3/1000 str. +-		2.5
hPa	•	1000	Ī	Shutoff solenoid	:	2.5
Del. quantity	•	,000	<u> </u>	Volt	:	12
cm3/1000 strokes	:	41.5	÷			
Tolerance			+	KSB/AFB Volt	:	12
cm3/1000 str. +- Check tolerance	:	0.5	†			
cm3/1000s. +-		2.0	Ī			
Shutoff solenoid	•	2.0	I			
Volt	:	12	+			
			+			
			+	START TRANSITION		
ELECTR. SHUTOFF			<b>T</b>	Pated aread man		600
CONTROL LEVER, ID	F ST	OP.	Ī	Rated speed rpm Del. quantity	•	000
		•	1	cm3/1000 strokes	:	24.0
Rated speed rpm	:	450	+	Tolerance		
Del. quantity			+	cm3/1000 str. +-	:	10.0
cm3/1000 strokes	:	1.5	†	Shutoff solenoid		40
Tolerance cm3/1000 str. +-	•	1.5	Ī	Volt	:	12
Check tolerance	•	1.5	Ţ	KSB/AFB Volt	:	12
cm3/1000s. +-	:	1.5	1		•	
Spread			+			
cm3/1000 strokes	:	5.0	+	Rated speed rpm	:	300
KCD/ACD Walt		17	†	Del. quantity		/7.0
KSB/AFB Volt	·	12	İ	cm3/1000 strokes Tolerance	:	47.0
FULL-LOAD STOP CON	VTROI	LEVER	I	cm3/1000 str. +-	:	10.0
		,	+	Shutoff solenoid	-	
Rated speed rpm	:	450	+	Volt	:	12
Del. quantity cm3/1000 strokes			†	KSB/AFB Volt	:	12
	_	1.5				

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.1 Dimension K mm : 3,3

Tolerance mm + : +0,1
Dimension KF mm : 5,4
Tolerance mm + : +0,2
Dimension MS mm : 1,4

Tolerance mm +-: +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 43,9..52,5

mamanl.a	T Batalana i
remarks	Rated speed rpm : 1100
to Service Info for test and	+ Setting mm : 1.4
stment instructions.	+ Setting mm : 1.4 + Tolerance mm +-: 0.1
microcard(s) W400/	+ Shutoff solenoid
	+ Volt : 12
ion : 06.06.94	1
oil : ISO 4113	SUPPLY PUMP PRESSURE
	Total Total Theodoric
no. : 0 460 424 099	Rated speed rpm : 1100
designation: VE4/12F1400R539	+ Supply pomp
40019.1001011 1 12 17 127 1 10010307	pressure bar : 7.2
	Tolerance bar + : 0.3
omer-spec. information	+ Shutoff solenoid
mer : NISSAN-MISA : B 4.40 II	† Volt : 12
, D 4.40 II	FINE LOAD DELTY DETROUT BOOK
	FULL-LOAD DELIV. WITHOUT BOOS
BENCH REQUIREMENTS	Pated speed now : 0/0
DEMON REMOTERNIA	+ Rated speed rpm : 840 + Rated speed rpm : 500
flow	+ Del. quantity
riction mm : 0.55	
TOUTON IN 1. 0.55	cm3/1000 strokes : 74.0
	+ Del. quantity
0.75	† cm3/1000 strokes : 70.0
press. bar : 0.35	+ Tolerance
ance bar +-: 0.05	+ cm3/1000 str. +-: 0.5
	+ Tolerance
	+ cm3/1000 str. $+$ : 0.5
nozzle holde	+ Spread
mbly : 1 688 901 109	+ cm3/1000 strokes : 5.0
	+ Spread
ing pressure	+ cm3/1000 strokes : 5.0
: 207	Shutoff solenoid
rance bar +-: 3	+ Volt : 12
	- Shutoff solenoid
	+ Volt : 12
lines : 1 680 750 000	+ Check tolerance
	+ cm3/1000s. : 5.0
ide diameter : 6.00	+
	↓ IDLE SETTING
ide diameter : 2.00	+
ngth mm : 840	+ Rated speed rpm : 350
	+ Del. quantity
	+ cm3/1000 strokes : 15.0
RKS	+ Tolerance
W 7 W	$\frac{1}{1000}$ cm3/1000 str. $+$ : 2.0
	Shutoff solenoid
	+ Volt : 12
VING OF DELIVERY	
NTING OF DEFINERS	+ Spread
محالما الأرامين المامالة ما	+ cm3/1000 strokes : 5.0
of delivery blocking	+ Check tolerance
on abusia no : 0.7	+ cm3/1000s. : 5.0
ger stroke mm : 0,3	†
et : A	+

M03

	+ Shutoff solenoid
Rated speed rpm : 1575	+ Volt : 12
Del. quantity	+
cm3/1000 strokes : 54.0	+ Rated speed rpm : 1000
Tolerance	†
cm3/1000 str. +-: 2.0	+ Rated speed rpm : 500
Shutoff solenoid	+ Supply pomp
Volt : 12	pressure bar : 4.8
STARTING FUEL DELIVERY	+ Tolerance bar + : 0.3 + Shutoff solenoid
STAKITING LOCK DESTACK!	+ Volt : 12
Rated speed rpm : 100	I
Del. quantity	+ OVERFLOW QUANTITY
cm3/1000 strokes : 125.0	+ CONTROL SON SON SON SON SON SON SON SON SON SON
Tolerance	Rated speed rpm : 500
cm3/1000 str. +-: 30.0	- Overflow quantity
Shutoff solenoid	+ ccm/10s : 63.8
Volt : 12	+ Tolerance
	+ ccm/10s + : 22.2
	+
	+ Check tolerance
	+ ccm/10s +-: 22.2
	+ Shutoff solenoid
INJECTION-PUMP TEST SPECIFICATIONS	+ Volt : 12
TIMING DELIZOE GUADAGTEDIOTIC	1/00
TIMING DEVICE CHARACTERISTIC	Rated speed rpm : 1400
Dated aread no	+ Overflow quantity
Rated speed rpm : 1300	+ ccm/10s : 97.2
SV travel mm : 2.9	+ Tolerance + ccm/10s +-: 41.6
Tolerance mm +: 0.3	+ ccm/10s + : 41.6
Check	- Check tolerance
tolerance mm +: 0.8	+ ccm/10s + : 41.6
Shirtoff salenaid	The Shirt off solenoid
Shutoff solenoid	+ Shutoff solenoid - Vol+
Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
Volt : 12	+ Volt : 12
Volt : 12 Rated speed rpm : 1000	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12 Rated speed rpm : 1000 SV travel mm : 0.7	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575
Volt : 12 Rated speed rpm : 1000 SV travel mm : 0.7	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm +-: 0.3	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575  Del. quantity
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575  Del. quantity  cm3/1000 strokes : 54.0  Tolerance cm3/1000 str. +-: 2.0
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575  Del. quantity cm3/1000 strokes : 54.0  Tolerance cm3/1000 str. +-: 2.0 Check tolerance
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid  Volt : 12	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575  Del. quantity cm3/1000 strokes : 54.0  Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid
<pre>Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12</pre> Rated speed rpm : 1400	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575  Del. quantity cm3/1000 strokes : 54.0  Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0
<pre>Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4</pre>	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4  Tolerance mm + : 0.3	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid  Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4  Tolerance mm + : 0.3  Check	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid  Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4  Tolerance mm + : 0.3  Check tolerance mm + : 0.3	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0
<pre>Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm + : 0.3 Check tolerance mm + : 0.3 Shutoff solenoid</pre>	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance
Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7  Tolerance mm + : 0.3  Check tolerance mm + : 0.8  Shutoff solenoid  Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4  Tolerance mm + : 0.3  Check tolerance mm + : 0.3	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 10.0
Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm + : 0.3 Check tolerance mm + : 0.3 Shutoff solenoid Volt : 12	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 10.0 Check tolerance
<pre>Volt : 12  Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm + : 0.3 Check tolerance mm + : 0.3 Shutoff solenoid</pre>	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 10.0 Check tolerance cm3/1000s. +-: 10.0 Check tolerance cm3/1000s. +-: 10.0
Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm + : 0.3 Check tolerance mm + : 0.3 Check tolerance mm + : 0.8 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +- : 10.0 Check tolerance cm3/1000s. +- : 10.0 Shutoff solenoid
Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm +: 0.3 Check tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1400	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 10.0 Check tolerance cm3/1000s. +-: 10.0 Check tolerance cm3/1000s. +-: 10.0
Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm +: 0.3 Check tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1400 Supply pomp	DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +-: 2.0 Check tolerance cm3/1000s. +-: 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 10.0 Check tolerance cm3/1000s. +-: 10.0 Shutoff solenoid Volt : 12
Rated speed rpm : 1000  SV travel mm : 0.7 Tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  Rated speed rpm : 1400  SV travel mm : 3.4 Tolerance mm +: 0.3 Check tolerance mm +: 0.3 Check tolerance mm +: 0.8 Shutoff solenoid Volt : 12  SUPPLY PUMP PRESSURE CHARACTERISTIC  Rated speed rpm : 1400	Volt : 12  DELIVERY AND BREAKAWAY CHARACTERISTIC  Rated speed rpm : 1575 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 str. +- : 2.0 Check tolerance cm3/1000s. +- : 6.0 Shutoff solenoid Volt : 12  Rated speed rpm : 1525 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +- : 10.0 Check tolerance cm3/1000s. +- : 10.0 Shutoff solenoid

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Del. quantity		† Tolerance
cm3/1000 strokes	: 1.5	+ cm3/1000 str. $+$ : 1.5
Tolerance	. 15	+ Check tolerance
cm3/1000 str. +- Check tolerance	: 1.5	+ cm3/1000s. +-: 1.5
cm3/1000s. +-	: 1.5	Ī
Shutoff solenoid	• 1.5	IDLE DELIVERY
Volt	: 12	TOLL DELIVERY
		+ Rated speed rpm : 430
Rated speed rpm	: 1400	+ Del. quantity
Del. quantity		+ cm3/1000 strokes : 1.5
cm3/1000 strokes	: 76.0	+ Tolerance
Tolerance	. 2.5	+ cm3/1000 str. +-: 1.5
cm3/1000 str. +- Check tolerance	: 2.5	+ Check tolerance
cm3/1000s. +-	: 4.0	+ cm3/1000s. +-: 1.5 + Shutoff solenoid
Shutoff solenoid	. 4.0	Volt : 12
Volt	: 12	. 12
		<b>↓</b>
Rated speed rpm	: 1000	+
Del. quantity		+
cm3/1000 strokes	: 75.5	+
Tolerance	2.5	+
cm3/1000 str. +	: 2.5	+ START TRANSITION
Check tolerance cm3/1000s. +-	: 4,0	Poted speed man 4 250
Shutoff solenoid	. 4.0	+ Rated speed rpm : 250 + Del. quantity
Volt	: 12	+ cm3/1000 strokes : 70.0
		+ Tolerance
Rated speed rpm	: 500	+  cm3/1000  str. + : 20.0
Del. quantity		+ Shutoff solenoid
cm3/1000 strokes	: 70.0	+ Volt : 12
Tolerance		+
cm3/1000 str. +-	: 0.5	<b>†</b>
Check tolerance	: 3.5	+ Rated speed rpm : 130
cm3/1000s. +- Shutoff solenoid	: 3.5	+ Del. quantity + cm3/1000 strokes : 125.0
Volt	: 12	+ cm3/1000 strokes : 125.0 + Tolerance
VOCC	• 'C	cm3/1000 str. +: 30.0
	······································	Shutoff solenoid
MECHANICAL SHUTOF	F	+ Volt : 12
		+
Rated speed rpm	: 1400	
Del. quantity		+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes	: 1.5	† <b>N</b> inanai na Kana <b>7.7</b>
Tolerance	: 1.5	+ Dimension K mm : 3,7
cm3/1000 str. +- Check tolerance	: 1.3	+ Tolerance mm +-: +-0,1 + Dimension KF mm : 6,4
cm3/1000s. +-	: 1.5	+ Tolerance mm +-: +-0,2
Shutoff solenoid	• 1.5	Dimension MS mm : 1,1
Volt	: 12	+ Tolerance mm +-: +-0,2
		+
ELECTR. SHUTOFF		+
CONTROL LEVER, ID	LE STOP	+ CONTROL LEVER POSITION
Data da amanda man	. 750	+ SET
Rated speed rpm	: 550	†
Del. quantity cm3/1000 strokes	: 1.5	Control lever
CIID/ TODO SCI OKES	. 1.5	position YA mm : 37,239,2

Control lever position YB mm	: 52,760,4	

	<b>+</b>
BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1200 Aneroid pressure
Note remarks	hPa : 1000
Refer to Service Info for test and	Setting mm : 1.8 Tolerance mm +-: 0.1
adjustment instructions. See microcard(s) W400/	+ Tolerance mm +-: U.1 + Shutoff solenoid
	+ Volt : 12
Edition : 21.06.95 Test oil : ISO 4113	SUPPLY PUMP PRESSURE
Part no. : 0 460 414 120	Rated speed rpm : 1200
Pump designation : VE4/11F1900R542-1	+ Aneroid pressure + hPa : 1000
Customan anna information	hPa : 1000 Supply pomp
Customer—spec. information	pressure bar : 6.0 Tolerance bar + : 0.3
Customer : IVECO-SOFIM Motor : 8140.47.2200	+ Shutoff solenoid
	Volt : 12
	+
TEST BENCH REQUIREMENTS	+ FULL-LOAD DELIVERY WITH BOOST PRESSURE
Calibrating-oil return	+ Rated speed rpm : 1400 + Aneroid pressure
temperature °C · 45	+ hPa : 1000
Tolerance °C +: 1	+ Del. quantity + cm3/1000 strokes : 56.0
Overflow	+ Tolerance
restriction mm : 0.75	- cm3/1000 str. +-: 0.5
	+ Spread + cm3/1000 strokes : 4.0
Inlet press. bar : 0.35	+ Check tolerance
Tolerance bar +-: 0.05	+ cm3/1000s. : 4.5
	+ Shutoff solenoid + Volt : 12
Test nozzle holde	+
assembly : 1 688 901 027	FULL-LOAD DELIV. WITHOUT BOOST PRESSURE
Opening pressure	Rated speed rpm : 550
bar : 250	+ Del. quantity
Tolerance bar ←: 3	+ cm3/1000 strokes : 27.0
	Tolerance
Test lines : 1 680 750 073	+ cm3/1000 str. + : 0.5 + Shutoff solenoid
	+ Volt : 12
Outside diameter : 6.00	+ Check tolerance
x inside diameter : 2.00	† cm3/1000s. : 4.5
x length mm : 450	IDLE SETTING
-	+
DEMADIC	+ Rated speed rpm : 325
REMARKS	+ Del. quantity + cm3/1000 strokes : 17.0
	† Tolerance
	+ cm3/1000 str. +: 2.0
TALLECTION DIMO SETTING VALUES	+ Shutoff solenoid
INJECTION PUMP SETTING VALUES	+ Volt : 12 + Spread
TIMING DEVICE TRAVEL	- cm3/1000 strokes : 6.0
· · · · · · · · · · · · · · · · · · ·	en en en en en en en en en en en en en e

Charle Astronom		•	<b>.</b>	
Check tolerance cm3/1000s.	: 6	.5	Del. quantity cm3/1000 strokes : Tolerance	-0.8
		$\frac{1}{2}$	cm3/1000 str. +- : Shutoff solenoid	0.1
FULL-LOAD SPEED R	GIU ATTON	$\frac{1}{2}$	Volt :	12
TOLL LOAD STELD IN	COCHITON	Ţ		
Rated speed rpm Pressure hPa	: 2100 : 100		INJECTION-PUMP TEST	SPECIFICATIONS
Del. quantity cm3/1000 strokes		+	TIMING DEVICE CHARA	CTERISTIC
Tolerance cm3/1000 str. +-		.0	Rated speed rpm : Aneroid pressure	1600
Shutoff solenoid Volt		12	hPa :	1000
VOCE	•	'`I	SV travel mm :	4.3
STARTING FUEL DEL	<b>IVERY</b>	1	Tolerance mm +-:	0.4
Rated speed rpm Del. quantity	: 100	1	tolerance mm + : Shutoff solenoid	0.7
cm3/1000 strokes	: 65	.0	Volt :	12
cm3/1000 str. +- Shutoff solenoid	: 25	.o <del>[</del>	Rated speed rpm : Aneroid pressure	1100
Volt	:	12	hPa :	1000
		_	SV travel mm :	1.1
LOAD-DEPENDENT ST	ART OF DE	IVERY	Tolerance mm +-: Check	
SETTING		1	tolerance mm +-: Shutoff solenoid	0.7
DELIVERY DIFFEREN	Œ	<u> </u>	Volt :	12
Rated speed rpm Pressure hPa	: 1400 : 100		Rated speed rpm : Aneroid pressure	1900
Del. quantity cm3/1000 strokes		+	hPa :	1000
Tolerance	20.	1	SV travel mm :	4.9
cm3/1000 str. +- Shutoff solenoid	: 1.	.0	Tolerance mm +-: Check	0.4
Volt	:	12	tolerance mm + : Shutoff solenoid	0.7
PRESSURE DIFFEREN	Œ	+	Volt :	12
Rated speed rpm Aneroid pressure	: 1400	<u> </u>	SUPPLY PUMP PRESSUR	E CHARACTERISTIC
hPa Del. quantity	: 100	00	Rated speed rpm : Aneroid pressure	1900
cm3/1000 strokes Tolerance	: -0.	.2	hPa : Supply pomp	1000
cm3/1000 str. +- Shutoff solenoid	: 0.	.1	pressure bar : Tolerance bar +- :	8.5 0.3
Volt	: 1	12	Shutoff solenoid Volt :	12
TIMING-DEVICE TRA	EL DIFFER	RENCE	Rated speed rpm :	
Rated speed rpm Aneroid pressure	: 1400	<u> </u>	Aneroid pressure hPa :	1000
hPa	: 100	oo ‡	•	.000

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Supply pomp pressure bar	:	4.1		‡	Aneroid pressure hPa	: 1000
Tolerance bar +- Shutoff solenoid	:	0.3		†	Del. quantity cm3/1000 strokes	: 1.5
Volt	:	12		Ŧ	Tolerance	. 1.5
OVERFLOW QUANTITY				+	cm3/1000 str. +- Check tolerance	: 1.5
Rated speed rpm	:	1900		†	cm3/1000s. +- Shutoff solenoid	: 1.5
Aneroid pressure	•	1700		<del>T</del>	Volt	: 12
hPa	:	1000		+		700
Overflow quantity ccm/10s	•	138.8		İ	Rated speed rpm Aneroid pressure	: 700
Tolerance	•			+	hPa	: 400
ccm/10s +	:	41.6		†	104/	
Check tolerance				I	LDA/ HBA stroke mm	: 6.2
ccm/10s +-	:	41.6		+	Del. quantity	
Shutoff solenoid Volt		12		t	cm3/1000 strokes Tolerance	: 44.0
γοει	•	12		<u> </u>	cm3/1000 str. +-	: 0.5
Rated speed rpm	:	700		+	Check tolerance	
Aneroid pressure hPa	•	1000		İ	cm3/1000s. +- Shutoff solenoid	: 4.0
Overflow quantity	•	_		Ŧ	Volt	: 12
ccm/10s	:	111.1		Ť		4000
Tolerance +-	:	22.2		1	Rated speed rpm Aneroid pressure	: 1900
	•			+	hPa	: 1000
Check tolerance ccm/10s +-		22.2		†	Del. quantity	
Shutoff solenoid	:	22.2		I	cm3/1900 strokes Tolerance	: 58.5
Volt	:	12		+	cm3/1000 str. +-	: 2.5
DELIVERY AND BREA	KALI	A CHVDVC	TEDICTIC	<u> </u>	Check tolerance cm3/1000s. +-	: 3.5
PETAGUL MAD DEFA	<b>VAW</b> 7	al Grianac	ICKISTIC	Ţ	Shutoff solenoid	. 5.5
Rated speed rpm	:	2100		†	Volt	: 12
Aneroid pressure hPa	•	1000		İ	Rated speed rpm	: 1200
Del. quantity	•			+	Aneroid pressure	. 1200
cm3/1000 strokes	:	37.0		+	hPa	: 1000
Tolerance cm3/1000 str. +-	:	3.0		I	Del. quantity cm3/1000 strokes	: 56.0
Check tolerance				+	Tolerance	
cm3/1000s. +- Shutoff solenoid	:	4.5		İ	cm3/1000 str. + Check tolerance	: 2.5
Volt	:	12		Ŧ	cm3/1000s. +-	: 4.0
On the discussion of the		2200		†	Shutoff solenoid	42
Rated speed rpm Aneroid pressure	:	2200		1	Volt	: 12
hPa	:	1000		+		: 1750
Del. quantity cm3/1000 strokes		16.0		†	Aneroid pressure hPa	. 1000
Check tolerance	•	10.0		I	Del. quantity	: 1000
cm3/1000s. +-	:	6.0		+	cm3/1000 strokes	: 58.0
Shutoff solenoid Volt	•	12		<b>İ</b>	Tolerance cm3/1000 str. +-:	: 2.5
VOC.	•	12		Ī	Check tolerance	. 2.3
Rated speed rpm	:	2280		t	cm3/1000s. +-	3.5
				+		

Shutoff solenoid Volt : 12	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 700 Aneroid pressure	1
hPa : 1000 Del. quantity	
cm3/1000 strokes : 57.0 Tolerance	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000 str. +- : 4.5 Check tolerance	DELIVERY DIFFERENCE
cm3/1000s. +-: 5.5 Shutoff solenoid	Rated speed rpm : 1400
Volt : 12	Aneroid pressure hPa : 1000
Rated speed rpm : 1400 Aneroid pressure	Del. quantity cm3/1000 strokes : -28.0
hPa : 1000 Del. quantity	+ Tolerance + cm3/1000 str. +-: 3.0
cm3/1000 strokes : 56.0 Tolerance	+ Check tolerance + cm3/1000s. +-: 4.0
cm3/1000 str. +-: 0.5 Check tolerance	+ Shutoff solenoid + Volt : 12
cm3/1000s. +-: 3.5 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	+ Rated speed rpm : 1400
	+ Aneroid pressure + hPa : 1000
ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP	+ Del. quantity + cm3/1000 strokes : -0.8
Rated speed rpm : 325	+ Tolerance + cm3/1000 str. +-: 0.1
Del. quantity cm3/1000 strokes : 1.5 Tolerance	+ Check tolerance + cm3/1000s. + : 0.1 + Shutoff solenoid
cm3/1000 str. +-: 1.5 Check tolerance	Yolt : 12
cm3/1000s. + : 1.5	DELIVERY DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1400 Aneroid pressure
Rated speed rpm : 325 Del. quantity	hPa : 1000 Del. quantity
cm3/1000 strokes : 1.5 Tolerance	cm3/1000 strokes : . 1.5 Tolerance
cm3/1000 str. +-: 1.5 Check tolerance	+ cm3/1000 str. +-: 1.5 + Check tolerance
cm3/1000s. +-: 1.5	cm3/1000s. +: 1.5 + Shutoff solenoid
IDLE DELIVERY	Volt : 12
Rated speed rpm : 450 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1400 Aneroid pressure
cm3/1000 str. +-: 1.5 Check tolerance	+ hPa : 1000 + Tolerance mm +-: 0.2
cm3/1000s. +-: 1.5	+ Check + tolerance mm +-: 0.4

Shutoff solenoid

Volt 12

START TRANSITION

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 22.0

Tolerance

cm3/1000 str. +-: 8.0

Shutoff solenoid

Volt 12

Rated speed rpm : 200

Del. quantity

cm3/1000 strokes : 80.0

Tolerance

cm3/1000 str. +-:25.0

Shutoff solenoid

Volt 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 6.2

HBA stroke mm : 3,3 Tolerance mm +:+0,1Dimension KF mm : 8,4 Tolerance mm + : +0.2MS1 dimension mm : 1,7

Tolerance mm + : +0,15/-0,1

: 5,7 KSB travel mm

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 33,0..35,0

Control lever

: 48,9..54,9 position YB mm

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.07.95 Test oil : ISO 4113

Part no. : 0 460 414 128 Pump designation : VE4/11F1900R542-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.2200
Power KW : 83.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

**Overflow** 

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

**REMARKS** 

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Setting mm : 1.8
Tolerance mm +-: 0.1
Shutoff solenoid
Volt : 12

## SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.0
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm Aneroid pressure	:	1400
hPa	:	1000
Del. quantity		<b>5</b> 4 <b>5</b>
cm3/1000 strokes	:	56.0
Tolerance		
cm3/1000 str. +-	:	0.5
Spread		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	:	4.5
Shutoff solenoid		
Volt	•	12
1000	•	

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

550

Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 str. +- : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 4.5

Rated speed rpm :

## IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 str. + : 2.0
Shutoff solenoid
Volt : 12

Spread	+ Aneroid pressure
cm3/1000 strokes : 6.0	+ hPa : 1000
Check tolerance	+ Del. quantity
cm3/1000s. : 6.5	cm3/1000 strokes : -0.8 Tolerance
	- cm3/1000 str. +-: 0.1
	Shutoff solenoid
FULL-LOAD SPEED REGULATION	+ Volt : 12
Dotad annual annual annual annual annual annual annual annual annual annual annual annual annual annual annual	THE POTTON DIVING THE PROPERTY OF THE POTTON
Rated speed rpm : 2100	+ INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa : 1000	TIMENIO AFIJIATI GUADA OFFICIA
Del. quantity	+ TIMING DEVICE CHARACTERISTIC
cm3/1000 strokes : 37.0	† Data data da 1400
Tolerance	Rated speed rpm : 1600
cm3/1000 str. +: 3.0	+ Aneroid pressure
Shutoff solenoid	+ hPa : 1000
Volt : 12	†
OTANTAIN FILE OF THE	+ SV travel mm : 4.3
STARTING FUEL DELIVERY	+ Tolerance mm + : 0.4
	+ Check
Rated speed rpm : 100	+ tolerance mm + : 0.7
Del. quantity	+ Shutoff solenoid
cm3/1000 strokes : 65.0	+ Volt : 12
Tolerance	+
cm3/1000 str. +-: 25.0	
Shutoff solenoid	+ Aneroid pressure
Volt : 12	+ hPa : 1000
	+
	+ SV travel mm : 1.1
	+ Tolerance mm + : 0.4
LOAD-DEPENDENT START OF DELIVERY	+ Check
SETTING	+ tolerance mm + : 0.7
	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
Rated speed rpm : 1400	Rated speed rpm : 1900
Pressure hPa : 1000	+ Aneroid pressure
Del. quantity	+ hPa : 1000
cm3/1000 strokes : -26.0	1.000
Tolerance	SV travel mm : 4.9
cm3/1000 str. +-: 1.0	+ Tolerance mm +-: 0.4
Shutoff solenoid	+ Check
Volt : 12	tolerance mm + : 0.7
, 12	Shutoff solenoid
PRESSURE DIFFERENCE	+ Volt : 12
THESSONE DITTERENCE	1
Rated speed rpm : 1400	SUPPLY PUMP PRESSURE CHARACTERISTIC
Aneroid pressure	T SOFFET FUMP PRESSURE CHARACTERISTIC
hPa : 1000	Rated speed rpm : 1900
Del. quantity cm3/1000 strokes : -0.2	+ Aneroid pressure + hPa : 1000
Tolerance	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	+ Supply pomp
	pressure bar : 8.5
Shutoff solenoid	+ Tolerance bar +-: 0.3
Volt : 12	+ Shutoff solenoid
TIMING DELITOR TORLES DEPORTED	+ Volt : 12
TIMING-DEVICE TRAVEL DIFFERENCE	† Detail and
D. A. J. S. C. J. S. C. A. (20)	+ Rated speed rpm : 700
Rated speed rpm : 1400	+

Aneroid pressure	: 1000	-		Rated speed rpm	:	2280
Supply pomp				Aneroid pressure hPa	:	1000
pressure bar	: 4.1 : 0.3	-		Del. quantity		4 5
Tolerance bar +- Shutoff solenoid	: 0.3			cm3/1000 strokes Tolerance	:	1.5
Volt	: 12		+ (	cm3/1000 str. +-	:	1.5
OVERFLOW QUANTITY		•		Check tolerance	_	1.5
OVERTION SIGNIVITIE				cm3/1000s. +- Shutoff solenoid	•	1.5
Rated speed rpm	: 1900	•	1	Volt	:	12
Aneroid pressure hPa	: 1000	•	t,	Rated speed rpm	:	700
Overflow quantity		•		Aneroid pressure	•	700
ccm/10s	: 138.8	-	+ 1	hPa .	:	400
Tolerance ccm/10s +-	: 41.6	•	İ,	LDA/		
		-	+ 1	HBA stroke mm	:	6.2
Check tolerance ccm/10s	: 41.6	•	ţ !	Del. quantity cm3/1000 strokes		// 0
Shutoff solenoid	: 41.0			CM3/1000 Strokes Tolerance	•	44.0
Volt	: 12	-	+ (	cm3/1000 str. +-	:	0.5
Rated speed rpm	: 700	•		Check tolerance		4.0
Aneroid pressure	. 700	-	1	Shutoff solenoid	•	4.0
hPa	: 1000	-	† '	Volt	:	12
Overflow quantity ccm/10s	: 111.1	•	ļ ,	Rated speed rpm	:	1900
Tolerance		-	+ /	Aneroid pressure	•	
ccm/10s +-	: 22.2	-		hPa Dol gyontity	:	1000
Check tolerance		_		Del. quantity cm3/1000 strokes	:	57.0
ccm/10s +-	: 22.2	-		Tolerance		
Shutoff solenoid Volt	: 12			cm3/1000 str. +- Check tolerance	:	2.5
			} (	cm3/1000s. +-	:	3.5
DELIVERY AND BREA	KAWAY CHARAC	TERISTIC -		Shutoff solenoid	_	10
Rated speed rpm	: 2100	-	Ι '	Volt	•	12
Aneroid pressure	4000	-		Rated speed rpm	:	1200
hPa Del. quantity	: 1000			Aneroid pressure hPa		1000
cm3/1000 strokes	: 37.0	-	<del>)</del> (	Del. quantity	•	
Tolerance cm3/1000 str. +-	: 3.0	-		cm3/1000 strokes Tolerance	:	55.0
Check tolerance	. 5.0	-		cm3/1000 str. +-	:	2.5
cm3/1000s. +-	: 4.5	1	•	Check tolerance		, 0
Shutoff solenoid Volt	: 12	-		cm3/1000s. +- Shutoff solenoid	:	4.0
		-	1	Volt	:	12
Rated speed rpm Aneroid pressure	: 2200		t .	Rated speed rpm	:	1750
hPa	: 1000	-		Aneroid pressure	•	1750
Del. quantity	. 19.0	-	<del> </del>	nPa	:	1000
cm3/1000 strokes Check tolerance	: 18.0	7		Del. quantity cm3/1000 strokes	•	58.0
cm3/1000s. +-	: 6.0	-	} 7	Tolerance		
Shutoff solenoid Volt	: 12	-		cm3/1000 str. +- Check tolerance	:	2.5
VUCE	. 12	-		cm3/1000s. +-	:	3.5
			-			

Shutoff solenoid Volt : 12	Shutoff solenoid : 12
Rated speed rpm : 700 Aneroid pressure	<u> </u>
hPa : 1000 Del. quantity	<u> </u>
cm3/1000 strokes : 57.0 Tolerance	CHECKING LOAD-DEPENDENT START OF DELIVERY
cm3/1000 str. +-: 4.5 Check tolerance	DELIVERY DIFFERENCE
cm3/1000s. + : 5.5 Shutoff solenoid	+
Volt : 12	+ Rated speed rpm : 1400 + Aneroid pressure + hPa : 1000
Rated speed rpm : 1400 Aneroid pressure	Del. quantity
hPa : 1000	t cm3/1000 strokes : -28.0 Tolerance
Del. quantity cm3/1000 strokes : 56.0	+ cm3/1000 str. + : 3.0 Check tolerance
Tolerance cm3/1000 str. +-: 0.5	+ cm3/1000s. + : 4.0 + Shutoff solenoid
Check tolerance cm3/1000s. +-: 3.5	+ Volt : 12
Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
	+ Rated speed rpm : 1400 + Aneroid pressure
ELECTR. SHUTOFF	- + hPa : 1000 + Del. quantity
CONTROL LEVER, IDLE STOP	+ cm3/1000 strokes : -0.8 + Tolerance
Rated speed rpm : 325 Del. quantity	cm3/1000 str. + : 0.1 Check tolerance
cm3/1000 strokes : 1.5 Tolerance	cm3/1000s. + : 0.1 Shutoff solenoid
cm3/1000 str. +-: 1.5 Check tolerance	+ Volt : 12
cm3/1000s. +: 1.5	DELIVERY DIFFERENCE
FULL-LOAD STOP CONTROL LEVER	Rated speed rpm : 1400 Aneroid pressure
Rated speed rpm : 325 Del. quantity	hPa : 1000 Del. quantity
cm3/1000 strokes : 1.5 Tolerance	cm3/1000 strokes : 1.5 Tolerance
cm3/1000 str. +-: 1.5 Check tolerance	- cm3/1000 str. +-: 1.5 - Check tolerance
cm3/1000s. +-: 1.5	cm3/1000s. +: 1.5  Shutoff solenoid
IDLE DELIVERY	Volt : 12
Rated speed rpm : 450 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5 Tolerance	Rated speed rpm : 1400 Aneroid pressure
cm3/1000 str. +-: 1.5 Check tolerance	hPa : 1000
cm3/1000s. +-: 1.5	+ Check
	+ tolerance mm + : 0.4

Shutoff solenoid 12 Volt START TRANSITION 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 str. +-: 8.0 Shutoff solenoid Volt 12 Rated speed rpm 200 Del. quantity cm3/1000 strokes : 80.0 Tolerance cm3/1000 str. + : 25.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm Dimension K mm Tolerance mm +:+0,1Dimension KF mm : 8,4 Tolerance mm +:+0,2MS1 dimension mm : 1,6 +-: +0,15/-0,1 Tolerance mm KSB travel mm : 5,7 CONTROL LEVER POSITION SET Control lever position YA mm : 33,0..35,0 Control lever position YB mm : 48,9..54,9

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.02.95 Test oil : ISO 4113

Part no. : 0 460 494 400 Pump designation : VE4/9F2100R547-1

Customer—spec. information
Customer : FIAT-AUTO
Motor : M 721 CT 19.S
Power KW : 60.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C +-: 1

Overflow

restriction mm: 0.75

Inlet press. bar : 0.35 Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 638 901 022

Opening pressure

bar : 130 Tolerance bar + : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 6.0
Tolerance mm +: 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

KSB/AFB Volt

Rated speed rpm : 1500
Arieroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.1
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

Rated speed rpm : 1500 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 2.5 Shutoff solenoid 12 Volt

KSB/AFB Volt

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 41.5 Tolerance cm3/1000 str. + :0.5 Shutoff solenoid Volt 12 Check tolerance cm3/1000s. 2.5 KSB/AFB Volt 12

	+
HOUSING-FIXED IDLE SPRING	+ Rated speed rpm : 1500
RESIDUAL QUANTITY SETTING	+ Del. quantity
	+ cm3/1000 strokes : -10.0
Rated speed rpm : 600	† Tolerance
Del. quantity	+ cm3/1000 str. +-: 1.0
cm3/1000 strokes : 5.0	+ Shutoff solenoid
Tolerance	→ Volt : 12
cm3/1000 str. +-: 1.0	1
Shutoff solenoid	+ KSB/AFB Volt : 12
Volt : 12	+
	+ PRESSURE DIFFERENCE
KSB/AFB Volt : 12	The state of the s
	Rated speed rpm : 1500
IDLE DELIVERY	+ Del. quantity
IVEE VEEIVEN	cm3/1000 strokes : -0.2
Rated speed rpm : 450	Tolerance
Del. quantity	cm3/1000 str. + : 0.1
cm3/1000 strokes : 16.5	Shutoff solenoid
Tolerance	
cm3/1000 str. +-: 2.0	† Volt : 12
Spread 2.0	T KODIATO VALA . 42
cm3/1000 strokes : 2.5	+ KSB/AFB Volt : 12
Shutoff solenoid	TIMING DELITOR TOALIEL DIFFERENCE
	+ TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	1500
WOD /AFD W I I	+ Rated speed rpm : 1500
KSB/AFB Volt : 12	- Del. quantity
	+ cm3/1000 strokes : -0.9
<b>-</b>	+ Tolerance
FULL-LOAD SPEED REGULATION	+ cm3/1000 str. $+$ : 0.1
	+ Shutoff solenoid
Rated speed rpm : 2300	
Pressure hPa : 1000	Shutoff solenoid Volt : 12
Pressure hPa : 1000 Del. quantity	+ Shutoff solenoid
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0	Shutoff solenoid Volt : 12
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance	Shutoff solenoid Volt : 12
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. +-: 3.0	Shutoff solenoid Volt : 12
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. + : 3.0  Shutoff solenoid	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. +-: 3.0	Shutoff solenoid Volt : 12 KSB/AFB Volt : 12
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. + : 3.0  Shutoff solenoid	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. + : 3.0  Shutoff solenoid	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. + : 3.0  Shutoff solencid  Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC
Pressure hPa : 1000  Del. quantity  cm3/1000 strokes : 34.0  Tolerance  cm3/1000 str. + : 3.0  Shutoff solencid  Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0
Pressure hPa : 1000  Del. quantity cm3/1000 strokes : 34.0  Tolerance cm3/1000 str. + : 3.0  Shutoff solenoid  Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100  Del. quantity	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0
Pressure hPa : 1000  Del. quantity cm3/1000 strokes : 34.0  Tolerance cm3/1000 str. + : 3.0  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800 Aneroid pressure
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION-PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000  SV travel mm : 2.1
Pressure hPa : 1000 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. + : 3.0 Shutoff solencid Volt : 12  KSB/AFB Volt : 12  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 str. + : 15.0 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  LOAD-DEPENDENT START OF DELIVERY	Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  INJECTION—PUMP TEST SPECIFICATIONS  TIMING DEVICE CHARACTERISTIC  Rated speed rpm : 2100 Aneroid pressure hPa : 1000  SV travel mm : 9.0 Tolerance mm +-: 0.4 Check tolerance mm +-: 0.7 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  Rated speed rpm : 800 Aneroid pressure hPa : 1000

al 1				
Check	: 0.7	†	Chaol, Antonia	
tolerance mm +- Shutoff solenoid	: 0.7	†	Check tolerance	. 22.2
Volt	: 12	<b>T</b>	ccm/10s +- Shutoff solenoid	22.2
VOCE	. 12	<b>T</b>		: 12
KSB/AFB Volt	: 12	T	Volt	. 12
KOO ALO VOLL	• , _	I	KSB/AFB Volt	: 12
Rated speed rpm	: 500	T	KSB/AFB VOLL	. 12
Aneroid pressure	. 500	I	Rated speed rpm	: 2100
hPa	: 1000	I	Aneroid pressure	. 2100
1 pr G	• 1000	I	hPa	1000
SV travel mm	: 4.0	I	Overflow quantity	
Tolerance mm +	: 0.8	$\prod$	ccm/10s	: 138.8
Check		1	Tolerance	, 130.0
tolerance mm +	: 1.5	1		-: 41.6
Shutoff solenoid		1	00.117	. 41.0
Volt	: 12	1	Check tolerance	
, , , ,	•	1	ccm/10s +-	41.6
Rated speed rpm	: 1000	1	Shutoff solenoid	. ,,,,,
Aneroid pressure		1	Volt	: 12
hPa	: 1000	1		
		1	KSB/AFB Volt	: 12
SV travel mm	: 6.0	+		
Tolerance mm +-	: 1.5	+	DELIVERY AND BREA	KAWAY CHARACTERISTIC
Check		+		
tolerance mm +	: 2.0	+	Rated speed rpm	: 2300
Shutoff solenoid		+	Aneroid pressure	
Volt	: 12	+	hPa	: 1000
		+	Del. quantity	
SUPPLY PUMP PRESS	URE CHARACTERIST	IC +	cm3/1000 strokes	: 34.0
Data da ana ada ma	- 2400	†	Tolerance	7.0
	: 2100	†	cm3/1000 str. +-	•: 3.0
Aneroid pressure hPa	: 1000	Ť	Check tolerance cm3/1000s. +-	5.0
Supply pomp	. 1000	I	Shutoff solenoid	J.0
pressure bar	: 7.8	I	Volt	: 12
Tolerance bar +-		I	VOLL	. 12
Shutoff solenoid	. 0.3	1	KSB/AFB Volt	: 12
Volt	: 12	1	NOD/AID VOCE	, , , , ,
<b>1010</b>	•	<u> </u>	Rated speed rpm	: 2650
KSB/AFB Volt	: 12	<u> </u>	Aneroid pressure	2000
		1	hPa	: 1000
Rated speed rpm	: 800	+	Del. quantity	
Aneroid pressure		+	cm3/1000 strokes	: 3.5
hPa	: 1000	+	Shutoff solenoid	
Supply pomp		+	Volt	: 12
pressure bar	: 4.0	†		40
Tolerance bar +	: 0.3	†	KSB/AFB Volt	: 12
Shutoff solenoid	: 12	†	Datad and all man	. 2/50
Volt	: 12	Ť	Rated speed rpm Aneroid pressure	: 2450
KSB/AFB Volt	: 12	I	hPa	: 1000
KOD/AID VOCE	. , , ,	I	Del. quantity	. 1000
OVERFLOW QUANTITY		1	cm3/1000 strokes	: 17.0
		1	Tolerance	
Rated speed rpm	: 600	1	cm3/1000 str. +	4.0
Overflow quantity		+	Check tolerance	
ccm/10s	: 97.2	+	V	5.0
Tolerance		+	Shutoff solenoid	
ccm/10s +-	: 22.2	+	Volt	: 12

B/AFB Volt	: 12
speed rpm id pressure	: 900
3	: 350
/ stroke mm	: 5.2
quantity 000 strokes	_
rance	
k tolerance	_
toff solenoid	
t (AFD Well	: 12
/AFB Volt	: 12
ed speed rpm Proid pressure	
a L. quantity	: 1000
3/1000 strokes Lerance	
3/1000 str. +-	
3/1000s. + utoff solenoid	
lt	: 12
AFB Volt	: 12
d speed rpm oid pressure	: 900
. quantity	: 1000
3/1000 strokes Lerance	: 48.5
/1000 str. +-	: 1.5
3/1000s. +-	: 2.5
t solenoid	: 12
B/AFB Volt	: 12
	: 1500
roid pressure	: 1000
. quantity 5/1000 strokes	: 46.0
.erance 3/1000 str. +-	: 0.5
ck tolerance 3/1 <b>00</b> 0S. +	: 2.0
rtoff solenoid .t	: 12

Check tolerance	2.4
cm3/1000s. +- Shutoff solenoid	: 0.1
Volt	: 12
	•
KSB/AFB Volt	: 12
DELIVERY DIFFERENCE	Œ
Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes Tolerance	: 1.5
cm3/1000 str. +-	: 1.5
Check tolerance	4 =
cm3/1000s. +- Shutoff scilenoid	: 1.5
Volt	: 12
KSB/AFB Volt	: 12
KODYALB AGIT	: 12
TIMING-DEVICE TRAV	/EL DIFFERENCE
Rated speed rpm	: 1500
Tolerance mm +	: 0.3
Check tolerance mm +	: 0.4
Shutoff solenoid	. 0.4
Volt	: 12
KSB/AFB Volt	: 12
	· · · · · ·
START TRANSITION	
Data di anca di anca	. 750
Rated speed rpm Del. quantity	: 350
cm3/1000 strokes	: 40.0
Tolerance	<b>F</b> 0
cm3/1000 str. +- Shutoff solenoid	: 5.0
Volt	: 12
KSB/AFB Volt	: 12
KODY AFB VOCE	. 12
Rated speed rpm	: 220
Del. quantity	
cm3/1000 strokes	: 65.0
Tolerance cm3/1000 str. +-	: 13.0
Shutoff solenoid	. 13.0
Volt	: 12
KSB/AFB Volt	: 12
HOUT AND TOCK	

LDA/ HBA stroke mm : 5.2 Dimension K mm : 3,3 Tolerance mm + : +-0,1 Dimension KF mm : 5,4 Tolerance mm + : +-0,1 Dimension MS mm : 1,2 Tolerance mm + : +-0,2	
CONTROL LEVER POSITION SET	
Control lever position YA mm : 37,239,2	
Control lever position YB mm : 36,645,4	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.08.94 Test oil : ISO 4113

Part no. : 0 460 494 349 Pump designation : VE4/9F2100R548

Customer—spac. information
Customer : FIAT—AUTO
Motor : M705 VT19.D
Power KW : 60.0

#### TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45 Tolerance °C +- : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +-: 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500 Aneroid pressure hPa : 1000

Setting mm : 6.0
Tolerance mm + : 0.2
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.1
Tolerance bar +-: 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 46.0
Tolerance
cm3/1000 str. + : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance

cm3/1000s. : 2.5 Shutoff solenoid

Volt : 12 KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 41.5

Tolerance

cm3/1000 str. +-: 0.5 Shutoff solenoid

Volt Check tolerance

cm3/1000s. : 2.5

12

KSB/AFB Volt : 12

+	
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING	Rated speed rpm : 1500 Del. quantity
Rated speed rpm : 600	cm3/1000 strokes : -10.0
Del. quantity cm3/1000 strokes : 5.0	cm3/1000 str. +-: 1.0
Tolerance	Shutoff solenoid Volt : 12
cm3/1000 str. +-: 1.0 +	KSB/AFB Volt : 12
Volt : 12	PRESSURE DIFFERENCE
KSB/AFB Volt : 12	Rated speed rpm : 1500
IDLE DELIVERY	Del. quantity cm3/1000 strokes : -0.2
Rated speed rpm : 450 Del. quantity	Tolerance cm3/1000 str. +-: 0.1
cm3/1000 strokes : 16.5	Shutoff solenoid Volt : 12
cm3/1000 str. +-: 2.0 +	KSB/AFB Volt : 12
cm3/1000 strokes : 2.5 + Shutoff solenoid + -	TIMING-DEVICE TRAVEL DIFFERENCE
Volt : 12	Rated speed rpm : 1500
KSB/AFB Volt : 12	Del. quantity cm3/1000 strokes : -0.9 Tolerance
FULL-LOAD SPEED REGULATION	cm3/1000 str. +-: 0.1 Shutoff solenoid
Rated speed rpm : 2300 Pressure hPa : 1000	Volt : 12
Del. quantity cm3/1000 strokes : 34.0	KSB/AFB Volt : 12
Tolerance + : 3.0 +	INJECTION—PUMP TEST SPECIFICATIONS
Shutoff solenoid + 12 + 12	TIMING DEVICE CHARACTERISTIC
KSB/AFB Volt : 12	Rated speed rpm : 2100
STARTING FUEL DELIVERY +	Aneroid pressure hPa : 1000
Rated speed rpm : 100	SV travel mm : 9.0
Del. quantity cm3/1000 strokes : 65.0	Tolerance mm +-: 0.4 Check
Tolerance + 15.0 + 15.	tolerance mm + : 0.7 Shutoff solenoid
Shutoff solenoid + 12 + 12	Volt : 12
KSB/AFB Volt : 12	KSB/AFB Volt : 12
‡	Rated speed rpm : 800 Aneroid pressure
LOAD-DEPENDENT START OF DELIVERY	hPa : 1000
SETTING	SV travel mm : 2.1 Tolerance mm +-: 0.4
DELIVERY DIFFERENCE	· · · · · · · · · · · · · · · · · · ·

Check tolerance mm +: 0.7 + Check tolerance	
(	
Volt : 12 + Shutoff solenoid	
+ Volt : 12	
KSB/AFB Volt : 12	
+ KSB/AFB Volt : 12	
Rated speed rpm : 500	
Aneroid pressure + Rated speed rpm : 2100	
hPa : 1000 + Aneroid pressure	
+ hPa : 1000	
SV travel mm : 4.0 \rightarrow Overflow quantity	
Tolerance mm $+$ : 0.8 $+$ ccm/10s : 138.8	
Check + Tolerance	
tolerance mm +: 1.5 $+$ ccm/10s +: 41.6	
Shutoff solenoid	
Volt : 12 + Check tolerance	
+ ccm/10s + : 41.6	
Rated speed rpm : 1000 + Shutoff solenoid	
Aneroid pressure + Volt : 12	
hPa : 1000	
KSB/AFB Volt : 12	
SV travel mm : 6.0	
Tolerance mm +: 1.5 + DELIVERY AND BREAKAWAY CHARAC	TERISTIC
Check	
tolerance mm +: 2.0 + Rated speed rpm : 2300	
Shutoff solenoid + Aneroid pressure	
Volt : 12 + hPa : 1000	
+ Del. quantity	
SUPPLY PUMP PRESSURE CHARACTERISTIC + cm3/1000 strokes : 34.0	
+ Tolerance	
Rated speed rpm : 2100 + cm3/1000 str. +-: 3.0	
Aneroid pressure + Check tolerance	
hPa : 1000 $\frac{1}{2}$ cm3/1000s. $\frac{1}{2}$ : 5.0	
Supply pomp + Shutoff solenoid	
pressure bar : 7.8 + Volt : 12	
Tolerance bar +-: 0.3	
Shutoff solenoid + KSB/AFB Volt : 12	
Volt : 12	
Rated speed rpm : 2650	
KSB/AFB Volt : 12 + Aneroid pressure	
+ hPa : 1000	
Rated speed rpm : 80C + Del. quantity	
Rated speed rpm : 80C	
Rated speed rpm : 80C	
Rated speed rpm : 80C	
Rated speed rpm : 80C Aneroid pressure hPa : 1000 Supply pomp pressure bar : 4.0  Del. quantity cm3/1000 strokes : 3.5 Shutoff solenoid Volt : 12	
Rated speed rpm : 80C Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C Aneroid pressure hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C Aneroid pressure hPa : 1000	
Rated speed rpm : 80C Aneroid pressure hPa : 1000	
Rated speed rpm : 80C Aneroid pressure hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C  Aneroid pressure  hPa : 1000	
Rated speed rpm : 80C	

			†
KSB/AFB Volt	:	12	FI FOTO CHUTOFF
Rated speed rpm Ameroid pressure	:	900	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
hPa	:	350	Rated speed rpm : 450 Del. quantity
LDA/ HBA stroke mm	:	5.2	cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes		46.5	cm3/1000 str. ←: 1.5 + Check tolerance
Tolerance cm3/1000 str. +-		0.5	- cm3/1000s. +-: 1.5 - Spread
Check tolerance cm3/1000s.	-	2.5	cm3/1000 strokes : 5.0
Shutoff solenoid	•	12	KSB/AFB Volt : 12
	•		Ŧ
KSB/AFB Volt	:	12	‡
Rated speed rpm Aneroid pressure hPa	: 2	₹ <b>0</b> 0 1000	RESIDUAL QUANTITY
Del. quantity cm3/1000 strokes	•	46.5	Rated speed rpm : 550 Del. quantity
Tolerance		1.5	cm3/1000 strokes : 7.0
Check tolerance cm3/1000s.	•	2.5	+ cm3/1000 str. + : 1.5 + Shutoff solenoid
Shutoff solenoid	•	12	Volt : 12
KSB/AFB Volt	•	12	KSB/AFB Volt : 12
NOB/AFB VOLL	•	12	Ī
Rated speed rpm Aneroid pressure	:	900	CHECKING LOAD-DEPENDENT
hPa Del. quantity	:	1000	START OF DELIVERY
cm3/1000 strokes Tolerance	:	48.5	DELIVERY DIFFERENCE
cm3/1000 str. +- Check tolerance	:	1.5	Rated speed rpm : 1500  Del. quantity
cm3/1000s. +- Shutoff solenoid	:	2.5	- cm3/1000 strokes : -14.0 - Tolerance
Volt	:	12	- cm3/1000 str. +-: 4.0 - Check tolerance
KSB/AFB Volt	:	12	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
Rated speed rpm Aneroid pressure	: 1	500	Volt : 12
hPa Del. quantity	:	1000	KSB/AFB Volt : 12
cm3/1000 strokes Tolerance	:	46.0	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. ←	:	0.5	Rated speed rpm : 1500  Del. quantity
cm3/1000s. +- Shutoff solenoid	:	2.0	cm3/1000 strokes : -0.9
Volt	:	12	cm3/1000 str. +-: 0.1
			•

Check tolerance	+	
cm3/1000s. +-:	0.1	
Shutoff solenoid	1	Rated speed rpm : 220
Volt :	12	Del. quantity
	1	cm3/1000 strokes : 65.0
KSB/AFB Volt :	12	Tolerance
RSB/AFB VOLE .	12 +	
DEL THERY AT FEFRENCE	†	cm3/1000 str. +-: 13.0
DELIVERY DIFFERENCE	†	Shutoff solenoid
Data da an and	4500	Volt : 12
Rated speed rpm :	1500 +	
Del. quantity	+	KSB/AFB Volt : 12
cm3/1000 strokes :	1.5	
Tolerance	+	
cm3/1000 str. +-:	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance	+	
cm3/1000s. +-:	1.5	
Shutoff solenoid	<del>}</del>	LDA/
Volt :	12	HBA stroke mm : 5.2
•	1	Dimension K mm : 3,3
KSB/AFB Volt :	12	Tolerance mm +-: +-0,1
	1	Dimension KF mm : 5,4
TIMING-DEVICE TRAVEL	DIEGEDENCE I	Tolerance mm + : +-0,2
THE PEATER TRAVER	DIFFERENCE T	Diamaia MC 12
Dated aread are	1500	Dimension MS mm : 1,2
Rated speed rpm :		Tolerance mm + : +-0,2
Tolerance mm +:	0.3	
Check	<b>-</b>	POTENTIOMETER
tolerance mm +:	0.3	SET.
Shutoff solenoid	<del>†</del>	
Volt :	12 +	1. measurement
	+	voltage Volt : 5,0
KSB/AFB Volt :	12 +	1. measurement
	+	voltage Volt : 0,8
<del></del>		
EXHAUST-GAS RECIRCULA	ATION 1	MICROSWITCH
	1	SET
Rated speed rpm :	1000	
Aneroid pressure	1	mm : ARF 12,0
hPs :	1000	• /11(1 12/0
Del. quantity	1	CONTROL LEVER POSITION
cm3/1000 strokes :	20.0	
Tolerance	7	SET
	1.0	
cm3/1000 str. +-:	1.0	Control
Check tolerance	3.5	Control lever
cm3/1000s. +-:	2.5	position YA mm : 37,239,2
Shutoff solenoid	+	
Volt :	12 +	Control Lever
	+	position YB mm : 36,645,4
KSB/AFB Volt :	12 +	
	+	
START TRANSITION	+	
	<del>}</del>	
Rated speed rpm :	350	End of test-specification sheet
Del. quantity	1	and an edge opening of the officer
cm3/1000 strokes :	40.0	
Tolerance	T.	
cm3/1000 str. +-:	5.0	
	7.0	
Shutoff solenoid	13	
Volt :	12 +	
	†	
KSB/AFB Volt :	12 +	
M26		

M26

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.02.95 Test oil : ISO 4113

Part no. : 0 460 494 402 Pump designation : VE4/9F2100R548-1

Customer—spec. information Customer : FIAT-AUTO Motor : M721 CT19.N Power KW : 60.0

# TEST BENCH REQUIREMENTS

# Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar + : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar ⊢: 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 6.0
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Supply pomp pressure bar Tolerance bar +-	:	6.1 0.3
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes		46.0
Tolerance	•	40.0
cm3/1000 str. +-	:	0.5
Spread cm3/1000 strokes Check tolerance	:	2.5
cm3/1000s.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm	:	600
Del. quantity		14 5
cm3/1000 strokes Tolerance	:	41.5
cm3/1000 str. +		0.5
Shutoff solenoid	•	0.5
Volt	:	12
Check tolerance		
cm3/1000s.	:	2.5
		40
KSB/AFB Volt	:	12

+	
HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING	Rated speed rpm : 1500 Del. quantity
Rated speed rpm : 600	cm3/1000 strokes : -10.0 Tolerance
Del. quantity cm3/1000 strokes : 5.0	cm3/1000 str. + : 1.0 Shutoff solenoid
Tolerance cm3/1000 str. + : 1.0	Volt : 12
Shutoff solenoid Volt : 12	KSB/AFB Volt : 12
KSB/AFB Volt : 12	PRESSURE DIFFERENCE
IDLE DELIVERY	Rated speed rpm : 1500 Del. quantity
Rated speed rpm : 450	cm3/1000 strokes : -0.2 Tolerance
Del. quantity cm3/1000 strokes : 16.5	cm3/1000 str. +-: 0.1 Shutoff solenoid
Tolerance cm3/1000 str. +-: 2.0	Volt : 12
Spread + cm3/1000 strokes : 2.5 +	KSB/AFB Volt : 12
Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE
KSB/AFB Volt : 12	Rated speed rpm : 1500 Del. quantity
1	cm3/1000 strokes : -0.9 Tolerance
FULL-LOAD SPEED REGULATION	cm3/1000 str. +-: 0.1 Shutoff solenoid
Rated speed rpm : 2300 + Pressure hPa : 1000 +	Volt : 12
Del. quantity cm3/1000 strokes : 34.0	KSB/AFB Volt : 12
Tolerance + : 3.0 +	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid + 12 + 12	TIMING DEVICE CHARACTERISTIC
KSB/AFB Volt : 12	Rated speed rpm : 2100
STARTING FUEL DELIVERY	Aneroid pressure hPa : 1000
Rated speed rpm : 100	SV travel mm : 9.0
Del. quantity cm3/1000 strokes : 65.0	Tolerance mm + : 0.4 Check
Tolerance cm3/1000 str. +: 15.0	tolerance mm +-: 0.7 Shutoff solenoid
Shutoff solenoid + 12	Volt : 12
KSB/AFB Volt : 12	KSB/AFB Volt : 12
‡	Rated speed rpm : 800 Aneroid pressure
LOAD-DEPENDENT START OF DELIVERY	hPa : 1000
SETTING	SV travel mm : 2.1 Tolerance mm +-: 0.4
DELIVERY DIFFERENCE +	

Check		+
tolerance mm +- Shutoff solenoid	: 0.7	+ Check tolerance + ccm/10s ++: 22.2
Volt	: 12	+ ccm/10s + : 22.2 + Shutoff solenoid
MODIATE MALE	. 42	+ Volt : 12
KSB/AFB Volt	: 12	+ KSB/AFB Volt : 12
Rated speed rpm	: 500	+
Aneroid pressure hPa	: 1000	+ Rated speed rpm : 2100 + Aneroid pressure
CV mayol m	, 0	<del> </del> hPa : 1000
SV travel mm Tolerance mm +-	: 4.0 : 0.8	<pre>+ Overflow quantity + ccm/10s : 138.8</pre>
Check tolerance mm +	: 1.5	Tolerance
Shutoff solenoid		+ ccm/10s +-: 41.6
Volt	: 12	<pre>Check tolerance ccm/10s + : 41.6</pre>
Rated speed rpm	: 1000	+ ccm/10s +: 41.6 + Shutoff solenoid
Aneroid pressure hPa	: 1000	+ Volt : 12
		KSB/AFB Volt : 12
SV travel mm Tolerance mm +-	: 6.0 : 1.5	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Check		+
tolerance mm +- Shutoff solenoid	: 2.0	+ Rated speed rpm : 2300 + Aneroid pressure
Volt	: 12	hPa : 1000
SUPPLY PUMP PRESSU	RE CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes : 34.0
		+ Tolerance
Rated speed rpm Aneroid pressure	: 2100	+ cm3/1000 str. +-: 3.0 + Check tolerance
hPa	: 1000	+ cm3/1000s. $+$ : 5.0
Supply pomp pressure bar	: 7.8	+ Shutoff solenoid + Volt : 12
Tolerance bar +		
Shutoff solenoid Volt	: 12	+ KSB/AFB Volt : 12
MCD/ACD Male	: 12	Rated speed rpm : 2650
KSB/AFB Volt		+ Aneroid pressure + hPa : 1000
Rated speed rpm Aneroid pressure	: 800	+ Del. quantity + cm3/1000 strokes : 3.5
hPa	: 1000	+ Shutoff solenoid
Supply pomp pressure bar	: 4.0	† Volt : 12
Tolerance bar +-		KSB/AFB Volt : 12
Shutoff solenoid Volt	: 12	+ Rated speed rpm : 2450
		Aneroid pressure
KSB/AFB Volt	: 12	+ hPa : 1000 + Del. quantity
OVERFLOW QUANTITY		+ cm3/1000 strokes : 17.0
Rated speed rpm	: 600	+ Tolerance + cm3/1000 str. +-: 4.0
Overflow quantity		† Check tolerance
ccm/10s Tolerance	: 97.2	+ cm3/1000s. + : 5.0 + Shutoff solenoid
ccm/10s +-	: 22.2	+ Volt : 12

MODIARD MELA		
KSB/AFB Volt	: 12	ELECTR. SHUTOFF
Rated speed rpm : Aneroid pressure	: 900	CONTROL LEVER, IDLE STOP
hPa	: 350	Rated speed rpm : 450 Del. quantity
LDA/ HBA stroke mm	: 5.2	cm3/1000 strokes : 1.5 Tolerance
Del. quantity cm3/1000 strokes	: 46.5	- cm3/1000 str. +-: 1.5 - Check tolerance
Tolerance cm3/1000 str. +:	: 0.5	- cm3/1000s. +-: 1.5 - Spread
Check tolerance cm3/1000s. +-	: 2.5	cm3/1000 strokes : 5.0
Shutoff solemoid Volt	: 12	KSB/AFE Volt : 12
KSB/AFB Volt	: 12	‡
Rated speed rpm :	: 2100	RESIDUAL QUANTITY
hPa Del. quantity	: 1000	Rated speed rpm : 550
cm3/1000 strokes : Tolerance	: 46.5	Del. quantity  cm3/1000 strokes : 7.0
cm3/1000 str. +-: Check tolerance	: 1.5	Tolerance + cm3/1000 str. +-: 1.5
cm3/1000s. +-: Shutoff solenoid	: 2.5	Shutoff solenoid Volt : 12
Volt	: 12	+ KSE/AFE Volt : 12
KSB/AFB Volt	: 12	‡
Aneroid pressure	900	CHECKING LOAD-DEPENDENT
hPa Del. quantity	: 1000	+ START OF DELIVERY
cm3/1000 strokes Tolerance		+ DELIVERY DIFFERENCE
cm3/1000 str. +-: Check tolerance		Rated speed rpm : 1500 Del. quantity
cm3/100ÚS. +-: Shutoff solenoid		cm3/1000 strokes : -14.0 Tolerance
Volt	: 12	cm3/1000 str. +-: 4.0 Check tolerance
	: 12	+ cm3/1000s. +-: 4.0 + Shutoff solenoid
Aneroid pressure	: 1500	+ Volt : 12
Del. quantity	: 1000	+ KSB/AFB Volt : 12
cm3/1000 strokes : Tolerance		TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. +- : Check tolerance		+ Rated speed rpm : 1500 + Del. quantity
cm3/1000s. + : Shutoff solenoid		+ cm3/1000 strokes : -0.9 + Tolerance
Volt :	: 12	+ cm3/1000 str. +-: 0.1

Check tolerance			
cm3/1000s. +- Shutoff solenoid	• :	0.1	
Volt	:	12	
KSB/AFB Volt	:	12	
DELIVERY DIFFEREN	ICE		
Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 str. +- Check tolerance	· :	1.5	
cm3/1000s. +- Shutoff solenoid	· :	1.5	
Volt	:	12	
KSB/AFB Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	•	1500	
Tolerance mm +-	• :	0.3	
tolerance mm +- Shutoff solenoid	:	0.3	
Volt	:	12	
KSB/AFB Volt	:	12	
KSB/AFB Volt  EXHAUST-GAS RECIR			
EXHAUST-GAS RECIR	CULA	TION	
EXHAUST-GAS RECIR	CULA	TION	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa	CULA	TION	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity	CULA:	TION 1000 1000	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	CULA:	TION 1000 1000 20.0	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	CULA:	TION 1000 1000 20.0	
EXHAUST-GAS RECIR  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +-	CCULA	TION 1000 1000 20.0	
EXHAUST-GAS RECIR  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance	CCULA	TION 1000 1000 20.0 1.0	
EXHAUST-GAS RECIR  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid	CULA:	TION 1000 1000 20.0 1.0 2.5	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt	CULA	TION 1000 1000 20.0 1.0 2.5	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt KSB/AFB Volt START TRANSITION Rated speed rpm	CULA	TION 1000 1000 20.0 1.0 2.5	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes	: : : :	TION 1000 1000 20.0 1.0 2.5 12 12	
EXHAUST-GAS RECIR  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +-	: : : :	TION 1000 1000 20.0 1.0 2.5 12 12	
EXHAUST-GAS RECIR Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : :	TION 1000 1000 20.0 1.0 2.5 12 12 12 350 40.0	
EXHAUST-GAS RECIR  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Check tolerance cm3/1000s. +- Shutoff solenoid Volt  KSB/AFB Volt  START TRANSITION  Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 str. +- Shutoff solenoid	: : : :	TION 1000 1000 20.0 1.0 2.5 12 12 12 350 40.0 5.0	

Rated speed rpm Del. quantity	:	220
cm3/1000 strokes	:	65.0
Tolerance cm3/1000 str. +- Shutoff solenoid	:	13.0
Volt	:	12
KSB/AFB Voit	:	12

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

5.2
3,3
+-0,1
5,4
+-0,2
1,2
+-0,2

# POTENTIOMETER SET

SEI

1. measurement voltage Volt : 5,0

1. measurement

voltage Volt : 1,85

MICROSWITCH

SET

: ARF 12,0

End of test-specification sheet

NO3

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.03.95 Test oil : ISO 4113

Part no. : 0 460 494 401 Pump designation : VE4/9F230OR549-1

Customer—spec. information
Customer : FIAT—AUTO
Motor : M721 CA 19.S
Power KW : 51.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.9
Tolerance mm +-: 0.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Supply pomp
pressure bar : 5.9
Tolerance bar +- : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 str. +-: 0.5 Spread cm3/1000 strokes : 3.0 Shutoff solenoid Volt 12 KSB/AFB Volt 12 :

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 530
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 str. +- : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

# IDLE DELIVERY

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 9.5
Tolerance
cm3/1000 str. +-: 1.0
Spread
cm3/1000 strokes : 2.5

Shutoff solenoid Volt : 12	+ Rated speed rpm : 1500 + Del. quantity
KSB/AFB Volt : 12	cm3/1000 strokes : -0.2
	+ cm3/1000 str. +-: 0.1
HIGH IDLE SETTING	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 500 Del. quantity	+ KSB/AFB Volt : 12
cm3/1000 strokes : 16.0 Tolerance	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 str. +-: 1.0 Shutoff solenoid	Rated speed rpm : 1500
Volt : 12	Del. quantity cm3/1000 strokes : -0.7
KSB/AFB Volt : 12	+ Tolerance + cm3/1000 str. + : 0.1
FULL-LOAD SPEED REGULATION	+ Shutoff solenoid
Rated speed rpm : 2475	+ Volt : 12 +
Del. quantity cm3/1000 strokes : 22.0 Tolerance	+ KSB/AF6 Volt : 12 
cm3/1000 str. +-: 3.0 Shutoff solenoid	INJECTION—PUMP TEST SPECIFICATIONS
Volt : 12	TIMING DEVICE CHARACTERISTIC
KSB/AFB Volt : 12	Rated speed rpm : 2300
STARTING FUEL DELIVERY	SV travel mm : 8.8 Tolerance mm +-: 0.4
Rated speed rpm : 100	T Check
Del. quantity cm3/1000 strokes : 55.0	tolerance mm +-: 0.7 Shutoff solenoid
Tolerance cm3/1000 str. +-: 20.0	+ Volt : 12 +
Shutoff solenoid Volt : 12	KSE/AFE Volt : 12
KSB/AFB Volt : 12	+ Rated speed rpm : 800
	+ SV travel mm : 3.0 + Tolerance mm +-: 0.4
LOAD-DEPENDENT START OF DELIVERY	- Check - tolerance mm +-: 0.7
SETTING	+ Shutoff solenoid + Volt : 12
DELIVERY DIFFERENCE	+
Rated speed rpm : 1500	+ KSB/AFB Volt : 12
Del. quantity cm3/1 <b>000</b> strokes : -8.5	Rated speed rpm : 500
Tolerance cm3/1000 str. +-: 1.0	+ SV travel mm : 4.4 + Tolerance mm +-: 0.8
Shutoff solenoid Volt : 12	+ Check + tolerance mm +-: 1.5
KSB/AFB Volt : 12	Shutoff solenoid Volt : 12
	+
PRESSURE DIFFERENCE	+ Rated speed rpm : 1000

Cit dans of m		5.0	´ †	Del. quantity		22.0
SV travel mm Tolerance mm +	:	5.0 1.5	†	cm3/1000 strokes Tolerance	:	22.0
Check	•	1.5	Ī	cm3/1000 str. +-		3.0
tolerance mm +	•	2.0	I	Check tolerance	•	5.0
Shutoff solenoid		<b>L</b> / <b>U</b>	1	cm3/1000s. +-	:	5.0
Volt	:	12	1	Shutoff solenoid	•	
			+	Volt	:	12
SUPPLY PUMP PRESSU	JRE	CHARACTERISTIC	+			
		07:00	+	KSB/AFB Volt	:	12
Rated speed rom	:	2300	+	<b>.</b>		2700
Supply pomp pressure bar		7.7	†	Rated speed rpm	:	2700
Tolerance bar +-		0.3	Ī	Del. quantity cm3/1000 strokes		6.0
Shutoff solenoid		0.5	I	Check tolerance	٠	0.0
Volt	2	12	1	cm3/1000s. +-	•	6.0
			1	Shutoff solenoid	•	
KSB/AFB Volt	:	12	+	Volt	:	12
			+			
Rated speed rpm	:	800	+	KSB/AFB Volt	:	12
Suboly bomb			†			2222
pressure bar Tolerance bar +-	:	4.2 0.3	†	Rated speed rpm	:	2900
Shutoff solenoid	•	0.5	Ī	Del. quantity cm3/1000 strokes		1.5
Volt	•	12	I	Tolerance	•	1.5
	•	, -	1	cm3/1000 str. +-	•	1.5
KSB/AFB Volt	:	12	+	Check tolerance	•	, , , ,
			+	cm3/1000s. +-	:	1.5
OVERFLOW QUANTITY			+	Shutoff solenoid		
<b>.</b>		2700	+	Volt	:	12
Rated speed rpm		2300	†	Kon Aso VIII		40
Overflow quantity ccm/10s		97.2	t	KSB/AFB Volt	:	12
Tolerance	•	71.6	I	Rated speed rpm		2300
ccm/10s +	•	41.6	$\perp$	Del. quantity	•	2300
	•		1	cm3/1000 strokes	:	33.0
Check tolerance			+	Tolerance		
cem/10s +	:	41.6	+	cm3/1000 str. +-	:	1.3
Shutoff solenoid			+	Check tolerance		
Volt	:	12	+	cm3/1000s. +	:	2.0
MCD /ACD Vala		12	†	Shutoff solenoid		12
KSB/AFB Volt	:	12	Ī	Volt	:	12
Rated speed rpm	:	600	I	KSB/AFB Volt	:	12
Overflow quantity	•		1	1100//110 10(2	•	, .
ccm/10s	:	63.8	<del> </del>	Rated speed rpm	:	1000
Tolerance			+	Del. quantity		
ccm/10s +-	:	22.2	+	cm3/1000 strokes	:	32.7
			+	Tolerance		
Check tolerance		22.2	†	cm3/1000 str. +	:	1.5
ccm/10s +- Shutoff solenoid	•	22.2	Ī	Check tolerance cm3/1000s. +-		2.5
Volt		12	I	Shutoff solenoid	•	4.5
1011	•	16	1	Volt	:	12
KSB/AFB Volt	:	12	+		•	
			+	KSB/AFB Volt	:	12
DELIVERY AND BREAK	KAWA	Y CHARACTERISTIC	+			
<b>.</b>		2/25	+	Rated speed rpm	:	600
Rated speed rpm	:	2475	†	Del. quantity	_	70 6
			+	cm3/1000 strokes	:	30.5

Tolerance	Shutoff solenoid
cm3/1000 str. +-: 1.5	Volt : 12
Check tolerance	
cm3/1000s. +-: 2.0 +	KSB/AFB Volt : 12
Shutoff solenoid +	1100/11/0 1000
Volt : 12 +	
<b>†</b>	IDLE DELIVERY
KSB/AFB Volt : 12	
<b>+</b>	Rated speed rpm : 350
Rated speed rpm : 1500 +	Dei. quantity
Del. quantity	cm3/1000 strokes : 23.0
cm3/1000 strokes : 34.0	
	Tolerance 7.4
Tolerance	cm3/1000 str. +-: 3.0
cm3/1000 str. +: 0.5	Shutoff solenoid
Check tolerance	Volt : 12
cm3/1000s. +-: 2.0 +	
Shutoff solenoid $\downarrow$	KSB/AFB Volt : 12
Volt : 12	100/11/2 10(0 1
. 12	
Ť	
†	CHECKING LOAD-DEPENDENT
	START OF DELIVERY
ELECTR. SHUTOFF +	
CONTROL LEVER, IDLE STOP	DELIVERY DIFFERENCE
·	
Rated speed rpm : 450	Rated speed rpm : 1500
Del. quantity	
	Del. quantity
cm3/1000 strokes : 1.5	cm3/1000 strokes : -13.0
Tolerance +	Tolerance
cm3/1000 str. + : 1.5 +	cm3/1000 str. +-: 4.0
Check tolerance	Check tolerance
cm3/1000s. +: 1.5	cm3/1000s. + : 4.0
Spread	Shutoff solenoid
cm3/1000 strokes : 5.0	
cms/ludu strokes : 3.0 +	Volt : 12
†	
+	KSB/AFB Volt : 12
+	
	TIMING-DEVICE TRAVEL DIFFERENCE
HOUSING-FIXED IDLE SPRING	TIMING-DEVICE TRAVEL DIFFERENCE
HOUSING-FIXED IDLE SPRING HIGH IDLE	Rated speed rpm : 1500
HIGH IDLE	Rated speed rpm : 1500 Del. quantity
HIGH IDLE  Rated speed rpm : 530	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7
HIGH IDLE  Rated speed rpm : 530  Del. quantity	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance
HIGH IDLE  Rated speed rpm : 530  Del. quantity  cm3/1000 strokes : 8.0	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1
HIGH IDLE  Rated speed rpm : 530  Del. quantity cm3/1000 strokes : 8.0  Tolerance	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Check tolerance
HIGH IDLE  Rated speed rpm : 530  Del. quantity  cm3/1000 strokes : 8.0  Tolerance  cm3/1000 str. +-: 2.5	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1
HIGH IDLE  Rated speed rpm : 530  Del. quantity  cm3/1000 strokes : 8.0  Tolerance  cm3/1000 str. +-: 2.5	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1
HIGH IDLE  Rated speed rpm : 530  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. +-: 2.5  Shutoff solenoid	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid
HIGH IDLE  Rated speed rpm : 530  Del. quantity  cm3/1000 strokes : 8.0  Tolerance  cm3/1000 str. +-: 2.5	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1
HIGH IDLE  Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12
HIGH IDLE  Rated speed rpm : 530  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. +-: 2.5  Shutoff solenoid	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid
HIGH IDLE  Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
HIGH IDLE  Rated speed rpm : 530  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. +-: 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12
HIGH IDLE  Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid Volt : 12	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE
HIGH IDLE  Rated speed rpm : 530  Del. quantity cm3/1000 strokes : 8.0  Tolerance cm3/1000 str. +-: 2.5  Shutoff solenoid Volt : 12  KSB/AFB Volt : 12	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY	Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -0.7  Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600	Rated speed rpm : 1500  Del. quantity cm3/1000 strokes : -0.7  Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. + : 0.1 Check tolerance cm3/1000s. + : 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 4.0	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 4.0 Tolerance	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 4.0 Tolerance cm3/1000 str. + : 1.5	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Shutoff solenoid
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 4.0 Tolerance cm3/1000 str. +-: 1.5 Check tolerance	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +- : 0.1 Check tolerance cm3/1000s. +- : 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +- : 1.5
Rated speed rpm : 530 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  RESIDUAL QUANTITY  Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 4.0 Tolerance cm3/1000 str. + : 1.5	Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -0.7 Tolerance cm3/1000 str. +-: 0.1 Check tolerance cm3/1000s. +-: 0.1 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  DELIVERY DIFFERENCE  Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +-: 1.5 Shutoff solenoid

KSB/AFB Volt : 12

#### TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm +-: 0.3

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### START TRANSITION

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 str. + : 10.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 130

Del. quantity

cm3/1000 strokes: 60.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

## ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm + : +-0,1
Dimension KF mm : 5,5
Tolerance mm + : +-0,2
Dimension MS mm : 1,5
Tolerance mm + : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 41,1..49,5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 14.02.96 Edition Test oil : ISO 4113

: 0 460 426 241 Part no. Pump designation: VE6/12F1250R556-1

Customer-spec. information Customer : PERKINS

: Q20 Phaser 195Ti Motor

#### TEST BENCH REQUIREMENTS

Overflow

0.55 restriction mm :

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar + : 3

Test lines : 1 680 750 073

Outside diameter : 6.CO

x inside diameter: 2.00 x length mm 450

#### REMARKS

#### BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke isn: 1,25 Tolerance mm + : +-0,02

: C Outlet

#### INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 1000 Aneroid pressure

hPa 1500

2.0 Setting mm Tolerance mm 0.1 Shutoff solenoid

Volt

#### SUPPLY PUMP PRESSURE

Volt

1000 Rated speed rpm Aneroid pressure 1500 hPa Supply pomp pressure bar 7.5 Tolerance bar +-: 0.3 Shutoff solenoid

#### FULL-LOAD DELIVERY WITH BOOST PRESSURE

24

24

Rated speed rpm 900 Aneroid pressure 1500 Del. quantity cm3/1000 strokes : 95.5 Tolerance cm3/1000 str. + :0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s.5.0 Shutoff solenoid Volt 24

#### FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 str. +-:0.5 Shutoff solenoid 24 Volt Check tolerance cm3/1000s.5.0

#### IDLE SETTING

Rated speed rpm 280

Del. quantity

cm3/1000 strokes : 11.0

Tolerance	+ Shutoff solenoid
cm3/1000 str. + : 2.0	+ Volt : 24
Shutoff solenoid	1
Volt : 24	Rated speed rpm : 1250
Spread	Aneroid pressure
cm3/1000 strokes : 6.5	+ hPa : 1500
	† 11ra : 1500
Check tolerance	† • • • • • • • • • • • • • • • • • • •
cm3/1000s. : 6.5	+ SV travel mm : 3.3
	+ Tolerance mm +-: 0.4
	† Shutoff solenoid
	+ Volt : 24
	+
FULL-LOAD SPEED REGULATION	→ SUPPLY PUMP PRESSURE CHARACTERISTIC
	+
Rated speed rpm : 1400	+ Rated speed rpm : 1250
Pressure hPa : 1500	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 45.0	
Tolerance	+ Supply pomp
	pressure bar : 8.5
cm3/1000 str. + : 3.0	+ Tolerance bar + : 0.3
Shutorf solenoid	+ Shutoff solenoid
Volt : 24	+ Volt : 24
	+
STARTING FUEL DELIVERY	+ Rated speed rpm : 700
	+ Aneroid pressure
Rated speed rpm : 100	+ hPa : 1500
Del. quantity	Supply pomp
cm3/1000 strokes : 160.0	pressure bar : 6.4
Tolerance	+ Tolerance bar + : 0.3
cm3/1000 str. +-: 30.0	+ Shutoff solenoid
Shutoff solenoid	
	+ Volt : 24
Volt : 24	OVEREI OU OUGUTTTIV
	+ OVERFLOW QUANTITY
	†
	+ Rated speed rpm : 500
	+ Overflow quantity
	+ ccm/10s : 63.8
INJECTION-PUMP TEST SPECIFICATIONS	+ Tolerance
	+ ccm/10s +-: 22.2
TIMING DEVICE CHARACTERISTIC	+
	+ Check tolerance
Rated speed rpm : 1100	+ ccm/10s +-: 22.2
Aneroid pressure	+ Shutoff solenoid
hPa : 1500	Volt : 24
. 1300	. 24
SV travel mm : 2.7	T Poted speed 1250
	Rated speed rpm : 1250
Tolerance mm + : 0.3	Aneroid pressure
Check	+ hPa : 1500
tolerance mm +-: 0.7	+ Overflow quantity
Shutoff solenoid	+ ccm/10s : 97.2
Volt : 24	+ Tolerance
	+ ccm/10s +-: 41.6
Rated speed rpm : 900	+
Aneroid pressure	Check tolerance
hPa : 1500	ccm/10s +-: 41.6
· · · · · · · · · · · · · · · · · · ·	+ Shutoff solenoid
SV travel mm : 1.1	+ Volt : 24
Tolerance mm + : 0.3	1
	T DEL TUEDY AND DESARAHAY CHARACTERISTIC
Check	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
tolerance mm + : 0.7	3

Rated speed rpm : Aneroid pressure	1400	+ Rated speed rpm : 700 + Aneroid pressure
hPa : Del. quantity	1500	+ hPa : 1500
cm3/1000 strokes : Tolerance	45.0	+ Del. quantity + cm3/1000 strokes : 97.0 + Tolerance
cm3/1000 str. +-: Check tolerance	3.0	cm3/1000 str. +: 3.0 Check tolerance
cm3/1000s. +-: Shutoff solenoid	6.0	- cm3/1000s. +-: 4.0 - Shutoff solenoid
Volt :	24	Volt : 24
Rated speed rpm : Aneroid pressure	1350	Rated speed rpm : 900 Aneroid pressure
hPa : Del. quantity	1500	hPa : 1500 Del. quantity
cm3/1000 strokes : Tolerance	80.0	cm3/1000 strokes : 95.5  Tolerance
cm3/1000 str. +-: Check tolerance	15.0	cm3/1000 str. +-: 0.5 Check tolerance
cm3/1000s. +-: Shutoff solenoid	15.0	cm3/1000s. +: 3.5 Shutoff solenoid
Volt :	24	Volt : 24
Rated speed rpm : Aneroid pressure	1480	MECHANICAL SHUTOFF
hPa : Del. quantity	1500	+
cm3/1000 strokes : Tolerance	1.5	+ Aneroid pressure
cm3/1000 str. +-: Check tolerance	1.5	+ Del. quantity
cm3/1000s. +-: Shutoff solenoid	1.5	+ cm3/1000 strokes : 1.5 + Tolerance + cm3/1000 str. +-: 1.5
Volt :	24	+ Check tolerance
Rated speed rpm :	700	+ Shutoff solenoid
Aneroid pressure hPa :	700	+ Volt : 24
Del. quantity cm3/1000 strokes : Tolerance	82.0	ELECTR. SHUTOFF
cm3/1000 str. +-: Check tolerance	0.5	CONTROL LEVER, IDLE STOP
cm3/1000s. +: Shutoff solenoid	3.5	+ Rated speed rpm : 280 + Del. quantity + cm3/1000 strokes : 1.5
Volt :	24	+ Tolerance + cm3/1000 str. +-: 1.5
Rated speed rpm :	1250	+ Check tolerance
Aneroid pressure hPa :	1500	+
Del. quantity cm3/1000 strokes :	104.0	FULL-LOAD STOP CONTROL LEVER
Tolerance cm3/1000 str. +-:	2.5	+ Rated speed rpm : 280 + Del. quantity
Check tolerance cm3/1000s. +:	3.5	- cm3/1000 strokes : 1.5 - Tolerance
Shutoff solenoid Volt :	24	- cm3/1000 str. +-: 1.5 - Spread
		+ cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. +-: 1.5 IDLE DELIVERY Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. ←: 1.5 Check tolerance cm3/1000s. 1.5 Shutoff solenoid Volt 24 Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 str. +-: 4.0 theck tolerance cm3/1000s. +-: 5.0 Shutoff solenoid Volt 24 START TRANSITION Rated speed rpm : 230 Del. quantity cm3/1000 strokes : 70.0 Tolerance cm3/1000 str. +-: 20.0 Shutoff solenoid 24 Volt 130 Rated speed rpm : Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 str. + :30.0 Shutoff solenoid Volt 24 ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,7 Tolerance mm +-:+-0.1Dimension KF mm : 6,4 Tolerance mm + : + 0.2MS1 dimension mm : 1,36 Tolerance mm + : +0,15/-0,1 KSB travel mm : 8,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..38,2

Control lever

position YB mm : 44,9..53,5

BOSCH INJ. PUMP TEST SPECIFICATIONS	Rated speed rpm : 1100
Note remarks	+ Aneroid pressure + hPa : 1000
TOTE LEMBINS	† 11ra : 1000
Refer to Service Info for test and	+ Setting mm : 2.7
adjustment instructions.	+ Tolerance mm + : 0.1
See microcard(s) W400/	+ Shutoff solenoid
	+ Volt : 24
Edition : 27.07.95	†
Test oil : ISO 4113	+ SUPPLY PUMP PRESSURE
	+
Part no. : 0 460 426 230	+ Rated speed rpm : 1100
Pump designation : VE6/12F1350R561	+ Aneroid pressure
	+ hPa : 1000
	+ Supply pomp
Customer—spec. information	pressure bar : 8.2
Customer : IVECO-FIAT	Tolerance bar + : 0.3
Motor : 8060.45.4385	+ Shutoff solenoid
	+ Volt : 24
TEST BENCH REQUIREMENTS	+ FULL-LOAD DELIVERY WITH BOOST PRESSUR
TEO DENOM REGULATION	+
Calibrating-oil	Rated speed rpm : 700
return	+ Aneroid pressure
temperature °C : 55	+ hPa : 1000
Tolerance °C +-: 1	Del. quantity
	+ cm3/1000 strokes : 65.0
Overflow	+ Tolerance
restriction mm : 0.75	+ cm3/1000 str. $+$ : 0.5
	Spread
	+ cm3/1000 strokes : 3.5
Inlet press. bar : 0.35	+ Check tolerance
Tolerance bar +-: 0.05	+ cm3/1000s. : 5.0
	+ Shutoff solenoid
	+ Volt : 24
Test nozzle holde	4
assembly : 1 688 901 027	+ FULL-LOAD DELIV. WITHOUT BOOST PRESSU
	+
Opening pressure	+ Rated speed rpm : 500
bar : 250	+ Del. quantity
Tolerance bar ←: 3	+ cm3/1000 strokes : 48.0
	† Tolerance
	+ cm3/1000 str. $+$ : 0.5
Test lines : 1 680 750 073	† Shutoff solenoid
	† Volt : 24
Outside diameter : 6.00	† Check tolerance
	+ cm3/1000s. : 5.0
x inside diameter : 2.00	†
x length mm : 450	+ IDLE SETTING
	Detail aread may 750
DEMADIC	+ Rated speed rpm : 350
REMARKS	+ Del. quantity
	+ cm3/1000 strokes : 12.0
	+ Tolerance
	+ cm3/1000 str. +-: 2.0
TALLECTION DUMP CETTING VALUES	+ Shutoff solenoid
INJECTION PUMP SETTING VALUES	+ Volt : 24
TIMING DEVICE TRAVEL	+ Spread + cm3/1000 strokes : 4.0
LINGUAGE DEVICE IDAVEL	+ cm3/1000 strokes : 4.0

Check tolerance cm3/1000s.	:	5.0	‡	Tolerance mm +- Check	:	0.3	
			1	tolerance mm +- Shutoff solenoid	:	0.7	
			<del>{</del>	Volt	:	24	
FULL-LOAD SPEED R	EGUL	_ATION	<u> </u>	SUPPLY PUMP PRESS	URE	CHARACTERISTIC	
Rated speed rpm Pressure hPa	:	1500 1000	İ	Rated speed rpm Aneroid pressure	:	1350	
Del. quantity cm3/1000 strokes	•	40.0	1	hPa Supply pomp	:	1000	
Tolerance cm3/1000 str. +-		3.0	+	pressure bar	:	9.7 0.3	
Shutoff solenoid	•		Ţ	Tolerance bar +- Shutoff sclenoid	•		
Volt	:	24	‡	Volt	:	24	
STARTING FUEL DEL	IVEF	RΥ	‡	Rated speed rpm Aneroid pressure	:	600	
Rated speed rpm Del. quantity	:	100	‡	hPa Supply pomp	:	1000	
cm3/1000 strokes	:	85.0	+	pressure bar	:	5.5	
Tolerance cm3/1000 str. +-	:	25.0	‡	Tolerance bar +- Shutoff solenoid	:	0.3	
Shutoff solenoid		27	+	Volt	:	24	
Volt	•	24,	‡	OVERFLOW QUANTITY			
			‡	Rated speed rpm	:	1350	
				Aneroid pressure hPa	:	1000	
INJECTION-PUMP TE	ST S	SPECIFICAT	rions	Overflow quantity ccm/10s	:	138.8	
TIMING DEVICE CHA	RACT	TERISTIC	1	Tolerance ccm/10s +-	•	41.6	
Rated speed rpm Aneroid pressure	:	1200	1	Check tolerance	•	41.0	
hPa	:	1000	<del>-</del>	ccm/10s +-	:	41.6	
SV travel mm	:	3.8	Ŧ	Shutoff solenoid Volt	:	24	
Tolerance mm + Shutoff solenoid	:	0.3	‡	Rated speed rpm	:	ó0 <b>0</b>	
Volt	:	24	‡	Aneroid pressure hPa	:	1000	
Rated speed rpm Aneroid pressure	:	1000	‡	Overflow quantity ccm/10s	:	111.1	
hPa	:	1000	<u>†</u>	Tolerance ccm/10s +-		41.6	
SV travel mm	:	1.5	Ŧ		•	41.0	
Tolerance mm +- Check	:	0.3	† +	Check tolerance ccm/10s +	:	41.6	
tolerance mm + Shutoff solenoid	:	0.7	+	Shutoff solenoid Volt	:	24	
Volt	:	24	<u> </u>	DELIVERY AND BREA	KAWA	Y CHARACTERISTI	ر
Rated speed rpm	:	1350	+		•		•
Aneroid pressure hPa	:	1000	‡	Rated speed rpm Aneroid pressure	•	1500	
SV travel mm	:	4.9	‡	hPa	:	1000	

Del. quantity cm3/1000 strokes :	40.0	+ Del. quantity + cm3/1000 strokes : 61.0
Tolerance cm3/1000 str. +-:	3.0	Tolerance + cm3/1000 str. +: 2.0
Check tolerance cm3/1000s. +-:	6.0	Check tolerance - cm3/1000s. +-: 3.5
Shutoff solenoid Volt :	24	+ Shutoff solenoid + Volt : 24
Rated speed rpm :	1450	Rated speed rpm : 600
Aneroid pressure hPa :	1000	+ Aneroid pressure + hPa : 1000
Del. quantity cm3/1000 strokes :	53.0	+ Del. quantity + cm3/1000 strokes : 68.0
Tolerance cm3/1000 str. +-: Check tolerance	8.0	+ Tolerance + cm3/1000 str. +-: 2.0 + Check tolerance
cm3/1000s. +: Shutoff solenoid	10.0	cm3/1000s. +: 3.5  Shutoff solenoid
Volt :	24	+ Volt : 24
Rated speed rpm : Aneroid pressure		+ Rated speed rpm : 700 + Aneroid pressure
hPa : Del quantity	1000	+ hPa : 1000 + Del. quantity
cm3/1000 strokes : Tolerance	1.5	+ cm3/1000 strokes : 65.0 + Tolerance
cm3/1000 str. +-: Check tolerance cm3/1000s. +-:	1.5 1.5	+ cm3/1000 str. + : 0.5 + Check tolerance
		CM4/2/31/10
Shutoff solenoid		+ cm3/1000s. + : 3.5 + Shutoff solenoid + Volt : 24
	24	
Shutoff solenoid Volt :	24	+ Shutoff solenoid
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes :	24 600	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Shutoff solenoid Volt : Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. +:	24 600 400	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + :	24 600 400 60.5	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance	24 600 400 60.5 0.5	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. +: 1.5 Check tolerance
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure h?a : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm :	24 600 400 60.5 0.5 4.0 24	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure h?a : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :	24 600 400 60.5 0.5 4.0 24 1350 1000	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure h?a : Del. quantity cm3/1000 strokes : Tolerance cm3/1000str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance	24 600 400 60.5 0.5 4.0 24 1350 1000 59.5	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350
Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure h?a : Del. quantity cm3/1000 strokes : Tolerance cm3/1000str. + : Check tolerance cm3/1000s. + : Shutoff solenoid Volt :  Rated speed rpm : Aneroid pressure hPa : Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance	24 600 400 60.5 0.5 4.0 24 1350 1000 59.5 1.5	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure h?a: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	24 600 400 60.5 0.5 4.0 24 1350 1000 59.5 1.5 3.5	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:	24 600 400 60.5 0.5 4.0 24 1350 1000 59.5 1.5 3.5 24	Shutoff solenoid  Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0
Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure h?a: Del. quantity cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid Volt:  Rated speed rpm: Aneroid pressure hPa: Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: Tolerance cm3/1000str. +: Check tolerance cm3/1000s. +: Shutoff solenoid	24 600 400 60.5 0.5 4.0 24 1350 1000 59.5 1.5 3.5 24	Shutoff solenoid Volt : 24  ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Check tolerance cm3/1000s. + : 1.5 Spread cm3/1000 strokes : 5.0  FULL-LOAD STOP CONTROL LEVER  Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 str. + : 1.5 Spread

Spread

cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm 425

Del. quantity

1.5 cm3/1000 strokes :

Tolerance

cm3/1000 str. +-:1.5

Check tolerance

cm3/1000s. 1.5

Shutoff solenoid

Volt 24

375 Rated speed rpm

Del. guantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 str. + :3.0

Check tolerance

cm3/1000s. 5.0

Shutoff solenoid

24 Volt

#### START TRANSITION

250 Rated speed rpm

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 str. +-: 15.0

Shutoff solenoid

24 Volt

Rated speed rpm 130

Del. quantity cm3/1000 strokes : 85.0

Tolerance

cm3/1000 str. + :25.0

Shutoff solenoid

24 Volt

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm

+: +0,1 Tolerance mm

: 6,0 Dimension KF mm

+-: +-0,2 Tolerance mm

MS1 dimension mm : 1,6

Tolerance mm +-:+0,15/0,1

KSB travel mm : 10,0 CONTROL LEVER POSITION

SET

Control lever

: 37,9..39,9 position YA mm

Control lever

: 42,5..47,7 position YB mm

End of test-specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.01.96 Test oil : ISO 4113

Part no. : 0 460 424 101 Pump designation : VE4/12F1200R568

Customer-spec. information Customer : MAN

Motor : D 0824 LFL 01 Power KW : 114.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C + : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar + : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

#### TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting mm : 2.2
Tolerance mm + : 0.2

KSB/AFB Volt : 24

## SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1500
Supply pomp
pressure bar : 6.7
Tolerance bar +: 0.3
KSB/AFB Volt : 24

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

1000 Rated speed rpm : Aneroid pressure hPa 1500 Del. quantity cm3/1000 strokes : 108.0 Tolerance cm3/1000 str.  $\leftarrow$ : Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 KSB/AFB Volt 24 :

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 str. +-: 0.5
Check tolerance
cm3/1000s. : 4.5
KSB/AFB Volt : 24

## IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 str. +- : 2.0
Spread
cm3/1000 strokes : 6.0

Check tolerance +	Aneroid pressure
cm3/1000s. : $6.5$	hPa : 1500
1	
KSB/AFB Volt : 24	SV travel num : 1.1
1	Tolerance mm +-: 0.4
1	Check
$\dot{1}$	tolerance mm +-: 0.7
1	cocci di lec initi
FULL-LOAD SPEED REGULATION	KSB/AFB Volt : 24
TOLL LOAD SPEED REGULATION	KSB/AFB volt : 24
Rated speed rpm : 1300	Dotted arrest 1200
	Rated speed rpm : 1200
	Aneroid pressure
Del. quantity	hPa : 1500
cm3/1000 strokes : 75.0	
Tolerance	SV travel mm : 4.9
cm3/1000 str. + : 3.0 +	Tolerance mm +-: 0.4
+	Check
KSB/AFB Volt : 24	tolerance mm +-: 0.4
+	
STARTING FUEL DELIVERY	KSB/AFB Volt : 24
+	
Rated speed rpm : 100	SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity	
cm3/1000 strokes : 135.0	Rated speed rpm : 1200
Tolerance	Aneroid pressure
cm3/1000 str. +-: 30.0	hPa : 1500
1	Supply pomp
KSB/AFB Volt : 24	pressure bar : 8.5
RODIATE VOCE . 24	Tolerance bar +-: 0.3
SET GRADUATED STARTING DELIVERY	roterance par +=: 0.5
	VCD /AFD Volt
CONTROL LEVER, IDLE STOP	KSB/AFB Volt : 24
<b>†</b>	
Rated speed rpm : 100 +	Rated speed rpm : 550
Del. quantity	Aneroid pressure
cm3/1000 strokes : 45.0 +	hPa : 1500
Tolerance	Supply pomp
cm3/1000 str. + : 1.0	pressure bar : 5.2
+	Tolerance bar +-: 0.3
KSB/AFB Volt : 24	
+	KSB/AFB Volt : 24
j.	
<del>}</del>	OVERFLOW QUANTITY
<del></del>	
INJECTION—PUMP TEST SPECIFICATIONS +	Rated speed rpm : 550
1	Overflow quantity
TIMING DEVICE CHARACTERISTIC +	ccm/10s : 63.8
<u> </u>	Tolerance
Rated speed rom : 1000	Tolerance
Rated speed rpm : 1000	Tolerance ccm/10s +-: 22.2
Aneroid pressure	ccm/10s +-: 22.2
	ccm/10s +-: 22.2 Check tolerance
Aneroid pressure hPa : 1500	ccm/10s +-: 22.2
Aneroid pressure hPa : 1500  SV travel mm : 4.0	ccm/10s       +-:       22.2         Check tolerance       ccm/10s       +-:       22.2
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4	ccm/10s +-: 22.2 Check tolerance
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm +-: 0.4 Check	ccm/10s       +-:       22.2         Check tolerance      :       22.2         KSB/AFB Volt :       24
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4	ccm/10s       +-:       22.2         Check tolerance       22.2         ccm/10s       +-:       22.2         KSB/AFB Volt       :       24         Rated speed rpm       :       1200
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  KSB/AFB Volt : 24  Rated speed rpm : 1200 Aneroid pressure
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm +-: 0.4 Check	Ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  KSB/AFB Volt : 24  Rated speed rpm : 1200  Aneroid pressure hPa : 1500
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  KSB/AFB Volt : 24	Ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  KSB/AFB Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7	Ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  KSB/AFB Volt : 24  Rated speed rpm : 1200  Aneroid pressure hPa : 1500
Aneroid pressure hPa : 1500  SV travel mm : 4.0 Tolerance mm + : 0.4 Check tolerance mm + : 0.7  KSB/AFB Volt : 24	Ccm/10s + : 22.2  Check tolerance ccm/10s + : 22.2  KSB/AFB Volt : 24  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Overflow quantity

Tolerance ccm/10s +-	41.6	†	Check tolerance cm3/1000s. +-	: 2.5
Check tolerance	·: 41.6	Ī	KSB/AFB Volt	: 24
KSB/AFB Volt	: 24	+	Rated speed rpm Aneroid pressure	: 1200
DELIVERY AND BREA	KAWAY CHARACTERIS	stic ‡	hPa Dei. quantity	: 1500
Rated speed rpm	: 1300	+	cm3/1000 strokes Tolerance	: 103.0
Aneroid pressure hPa	: 1500	1	cm3/1000 str. +- Check tolerance	: 2.5
Del. quantity cm3/1000 strokes	: 75.0	‡	cm3/1000s. +-	: 4.0
Tolerance cm3/1000 str. +-	3.0	‡	KSB/AFB Volt	: 24
KSB/AFB Volt	: 24	‡	Rated speed rpm Aneroid pressure	: 700
Rated speed rpm	: 1340	<u></u>	hPa Del. quantity	: 1500
Aneroid pressure hPa	: 1500	‡	cm3/1000 strokes Tolerance	: 112.5
Del. quantity cm3/1000 strokes	: 12.0	+	cm3/1000 str. +- Check tolerance	
KSB/AFB Volt	: 24	<del> </del>	cm3/1000s. +-	: 5.5
Rated speed rpm	: 1260	<del>†</del> +	KSB/AFB Volt	: 24
Aneroid pressure hPa	: 1500	<del>†</del>	Rated speed rpm Aneroid pressure	: 850
Del. quantity cm3/1000 strokes	: 100.0	<del>†</del>	hPa Del. quantity	: 1500
Check tolerance cm3/1000s. +-	5.0	+	cm3/1000 strokes Tolerance	
KSB/AFB Volt	: 24	<b>†</b>	cm3/1000 str. +- Check tolerance	
Rated speed rpm	: 1370	‡	cm3/1000s. +-	
Aneroid pressure hPa	: 1500	<del>†</del>	KSB/AFB Volt	: 24
Del. quantity cm3/1000 strokes	: 1.5	<del>†</del>	Rated speed rpm Aneroid pressure	
Tolerance cm3/1000 str. +-	: 1.5	‡	hPa Del. quantity	: 1500
Check tolerance cm3/1000s. +-	: 1.5	‡	cm3/1000 strokes Tolerance	
KSB/AFB Volt	: 24	‡	cm3/1000 str. +- Check tolerance	
Rated speed rpm	: 550	‡	cm3/1000s. +-	
Aneroid pressure hPa	: 400	‡	KSB/AFB Volt	: 24
LDA/	<b>7</b>	‡	Rated speed rpm Aneroid pressure	
HBA stroke mm Del. quantity	: 7.6	‡	hPa Del. quantity	: 1500
cm3/1000 strokes Tolerance		†	cm3/1000 strokes Tolerance	
cm3/1000 str. +-	: 0.5	†	cm3/1000 str. +-	: 0.5

Check tolerance cm3/1000s. +-:	2.5	‡
		ASSEMBLY AND ADJUSTMENT DIMENSIONS
MECHANICAL SHUTOFF		LDA/
Rated speed rpm : Aneroid pressure	1200	HBA stroke mm : 7.6 Dimension K mm : 3,7
hPa : Del. quantity	1500	+ Tolerance mm + : +-0,1
cm3/1000 strokes : Tolerance	1.5	+ Dimension KF mm : 6,4 + Tolerance mm +- : +-0,2 + MS1 dimension mm : 1,5
cm3/1000 str. +-: Spread	1.5	Tolerance mm + : +0,15/-0,1  KSB travel mm : 7,1
cm3/1000 strokes : Check tolerance	5.0	Not cravet in
cm3/1000s. +-: Spread	1.5	MICROSWITCH SET
cm3/1000 strokes :	5.0	man : GST 71,9
KSB/AFB Volt :	24	CONTROL LEVER POSITION SET
IDLE DELIVERY		1
Rated speed rpm :	500	Control lever position YA mm : 37,440,4
Del. quantity cm3/1000 strokes : Tolerance	1.5	Control lever
cm3/1000 str. +-: Check tolerance	1.5	+ position YB mm : 35,440,6
cm3/1000s. +:	1.5	
KSB/AFB Volt :	24	End of test-specification sheet
START TRANSITION		† †
Rated speed rpm : Del. quantity	430	<del> </del>
cm3/1000 strokes : Tolerance	68.0	+
cm3/1000 str. +-:	20.0	<del> </del>
KSB/AFB Volt :	24	<u>‡</u>
Rated speed rpm : Del. quantity	330	<del>\</del>
cm3/1000 strokes : Tolerance	90.0	‡
cm3/1000 str. +:	15.0	‡
KSB/AFB Volt :	24	‡

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95 Test oil : ISO 4113

Part no. : 0 460 494 353 Pump designation : VE4/9F225GR571

Customer—spec. information
Customer : OPEL
Motor : 1,7 DT—LC
Power KW : 50.0

#### TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C +-: 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar +-: 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar +- : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

# TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.2

Setting mm : 4.2
Tolerance mm +-: 0.1
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

#### SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pomp
pressure bar : 6.4
Tolerance bar +: 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

## FULL-LOAD DELIVERY WITH BOOST PRESSURE

0.5

Rated speed rpm : 1200 Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 33.3 Tolerance

cm3/1000 str. +-:

Spread cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 2.5

Shutoff solenoid

Voit : 12

KSB/AFB Volt : 12

# FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance

cm3/1000s. : 2.5

# HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800 Del. quantity

Del. quantity cm3/1000 strokes : 4.5

Tolerance

cm3/1000 str. +-: 0.5

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12	Volt : 12
IDLE DELIVERY	KSB/AFB Volt : 12
Rated speed rpm : 450 - Del. quantity -	LOAD-DEPENDENT START OF DELIVERY
cm3/1000 strokes : 17.0 Tolerance	SETTING
cm3/1000 str. +-: 1.0	DELIVERY DIFFERENCE
cm3/1000 strokes : 2.5 Shutoff solenoid	Rated speed rpm : 1000 Pressure hPa : 1000
Volt : 12	Del. quantity cm3/1000 strokes : -9.0
KSB/AFB Volt : 12	- Tolerance - cm3/1000 str. +-: 1.0
HIGH IDLE SETTING	Shutoff solenoid Volt : 12
Rated speed rpm : 540 Del. quantity	KSB/AFB Volt : 12
cm3/1000 strokes : 9.0 - Tolerance -	PRESSURE DIFFERENCE
cm3/1000 str. +-: 1.0 Shutoff solenoid	Rated speed rpm : 1000
Volt : 12	Aneroid pressure
KSB/AFB Volt : 12	Del. quantity - cm3/1000 strokes : -0.2
FULL-LOAD SPEED REGULATION	Tolerance
Rated speed rpm : 2550 Pressure hPa : 1000	- Shutoff solenoid - Volt : 12
Del. quantity cm3/1000 strokes : 24.0	KSB/AFB Volt : 12
Tolerance - cm3/1000 str. +-: 2.0 -	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid Volt : 12	Rated speed rpm : 1000
KSB/AFB Volt : 12	Aneroid pressure hPa : 1000
STARTING FUEL DELIVERY	Del. quantity cm3/1000 strokes : -0.6
Rated speed rpm : 100 -	Tolerance cm3/1000 str. +-: 0.1
Del. quantity cm3/1000 strokes : 44.0	- Shutoff solenoid - Volt : 12
Tolerance - 8.0	- KSB/AFB Volt : 12
Shutoff solenoid Volt : 12 -	TAUESTION DUMP TEST CHESTSTONE
KSB/AFB Volt : 12	INJECTION-PUMP TEST SPECIFICATIONS
SET GRADUATED STARTING DELIVERY	- TIMING DEVICE CHARACTERISTIC L
CONTROL LEVER, IDLE STOP	- Rated speed rpm : 2250 - Aneroid pressure
Rated speed rpm : 100 - Del. quantity -	- hPa : 1000
cm3/1000 strokes : 44.0	SV travel mm : 7.7

Tolerance mm + : 0.3	+ Supply pomp
Check -	pressure bar : 5.0
tolerance mm +-: 0.6	Tolerance bar + : 0.3
Shutoff solenoid - 12 - 12	+ Shutoff solenoid - Volt : 12
#WC - 12	
KSB/AFB Volt : 12	KSB/AFB Volt : 12
	<del> </del>
Rated speed rpm : 1000	OVERFLOW QUANTITY
Aneroid pressure - 1000 -	T 
. 1000	Aneroid pressure
SV travel mm : 1.7	hPa : 1000
Tolerance mm +-: 0.3	Overflow quantity
Check	f ccm/10s : 97.2
tolerance min +: 0.6	Tolerance
Shutoff solenoid - Volt : 12 -	+ ccm/10s +-: 41.6
, 12	Check tolerance
KSB/AFB Volt : 12	ccm/10s +-: 41.6
•	} Shutoff solenoid
Rated speed rpm : 400	† Volt : 12
Aneroid pressure - hPa : 1000 -	† KSB/AFB Volt : 12
rira : 1000 -	KSB/AFB Volt : 12
SV travel mm : 1.8	Rated speed rpm : 700
Tolerance mm ←: 1.0	Aneroid pressure
Check -	+ hPa : 1000
tolerance mm +: 1.2	Overflow quantity
Shutoff solenoid - Volt : 12 -	+ ccm/10s : 63.8
vott : 12	+         Tolerance           -         ccm/10s         +− : 22.2
Rated speed rpm : 800 -	1
Aneroid pressure	Check tolerance
hPa : 1000 -	ccm/10s +-: 22.2
- ON Assessed to 2.0	Shutoff solenoid
SV travel mm : 3.0 - Tolerance mm +-: 1.0 -	+ Volt : 12
Check -	KSB/AFB Volt : 12
tolerance mm +: 1.2	1
Shutoff solenoid -	DELIVERY AND BREAKAWAY CHARACTERISTIC
Volt : 12 -	+
SUPPLY PUMP PRESSURE CHARACTERISTIC -	+ Rated speed rpm : 2550 - Aneroid pressure
- SOLLET LOUIL LESSONE CHARACTERISTIC -	hPa : 1000
Rated speed rpm : 2250 -	Del. quantity
Aneroid pressure -	cm3/1000 strokes : 24.0
hPa : 1000 -	Tolerance
Supply pomp -	cm3/1000 str. +-: 2.0
pressure bar : 8.5 Tolerance bar + : 0.3	Check tolerance cm3/1000s. +-: 4.0
Shutoff solenoid	Shutoff solenoid
Volt : 12 -	Volt : 12
•	+
KSB/AFB Volt : 12 -	KSB/AFB Volt : 12
Poted aread are 1000	Poted speed ppg 3725
Rated speed rpm : 1000 - Aneroid pressure -	Rated speed rpm : 2725 Aneroid pressure
hPa : 1000 -	hPa : 1000
. = = =	+

Del. quantity cm3/1000 strokes :	7.0	Rated speed rpm : 700
Shutoff solenoid Volt :	12	+ Aneroid pressure + hPa : 1000
KSB/AFB Volt :	12	Del. quantity cm3/1000 strokes : 31.5
Rated speed rpm : Aneroid pressure	2950	+ Tolerance + cm3/1000 str. + : 1.5 + Check tolerance
hPa : Del. quantity	1000	+ cm3/1000s. + : 3.0 + Shutoff solenoid
cm3/1000 strokes : Tolerance	2.0	Volt : 12
cm3/1000 str. +-: Check tolerance	2.0	KSB/AFB Volt : 12
cm3/1000s: Shutoff solenoid	2.0	Rated speed rpm : 1200 Aneroid pressure
Volt :	12	hPa : 1000 + Del. quantity
KSB/AFB Volt :	12	cm3/1000 strokes : 33.3 Tolerance
Rated speed rpm : Aneroid pressure	2250	+ cm3/1000 str. +-: 0.5 + Check tolerance
hPa : Del. quantity cm3/1000 strokes :	1000 36.5	+ cm3/1000s. + : 2.3 + Shutoff solenoid + Volt : 12
Tolerance cm3/1000 str. +-:	1.3	+ Volt : 12 + Rated speed rpm : 700
Check tolerance cm3/1000s. +-:	2.3	+ Aneroid pressure + hPa : 50
Shutoff solenoid Volt :	12	Tolerance + cm3/1000 str. +-: 0.5
KSB/AFB Volt :	12	+ Check tolerance + cm3/1000s. + : 0.5
Rated speed rpm :	500	+ Check tolerance + cm3/1000S. +-: 0.5
Del. quentity cm3/1000 strokes :	31.0	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 str. +-: Check tolerance	2.5	KSB/AFB Volt : 12
cm3/1000s. +: Shutoff solenoid	3.0	Rated speed rpm : 700 Aneroid pressure
Volt :	12	hPa : 170  Del. quantity
KSB/AFB Volt :	12	+ cm3/1000 strokes : 2.4 + Tolerance
Rated speed rpm : Aneroid pressure	1800	+ cm3/1000 str. +: 1.0 + Check tolerance
hPa : Del. quantity	1000	+ cm3/1000s. +: 1.0 + Shutoff solenoid
cm3/1000 strokes : Tolerance	36.2 1.5	+ Volt : 12 + KSB/AFB Volt : 12
<pre>cm3/1000 str. + : Check tolerance cm3/1000s. + :</pre>	2.3	+ KSB/AFB Volt : 12
Shutoff solenoid Volt :	12	ELECTR. SHUTOFF
KSB/AFB Volt :	12	CONTROL LEVER, IDLE STOP

Rated speed rpm : 485	J
Del. quantity	TIMING DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes : 1.5	† TIMING-DEVICE TRAVEL DIFFERENCE
	T 5.4 1. 1. 1000
Tolerance	+ Rated speed rpm : 1000
cm3/1000 str. +-: 1.5	- Aneroid pressure
Check tolerance	+ hPa : 1000
cm3/1000s. +-: 1.5	+ Del. quantity
Spread	+ cm3/1000 strokes : −0.6
cm3/1000 strokes : 5.0	+ Tolerance
	+ cm3/1000 str. $+$ : 0.1
FULL-LOAD STOP CONTROL LEVER	† Check tolerance
	+ cm3/1000s. $+-$ : 0.1
Rated speed rpm : 485	+ Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 1.5	<del>}</del>
Tolerance	+ KSB/AFB Volt : 12
cm3/1000 str. +-: 1.5	+
Spread	→ DELIVERY DIFFERENCE
cm3/1000 strokes : 5.0	+
Check tolerance	Rated speed rpm : 1000
cm3/1000s. :-: 1.5	Aneroid pressure
Spread	+ hPa : 1000
cm3/1000 strokes : 5.0	+ Del. quantity
	+ cm3/1000 strokes : 6.0
	Tolerance
	+ cm3/1000 str. $+$ : 1.0
	- Check tolerance
	+  cm3/1000s. + : 1.0
IDLE DELIVERY	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 485	
Rated Speed rom : 400	+
	T KSB/AFB Volt : 12
Del. quantity	KSB/AFB Volt : 12
Del. quantity cm3/1000 strokes : 9.0	+
Del. quantity cm3/1000 strokes : 9.0 Tolerance	KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +-: 2.5	TIMING-DEVICE TRAVEL DIFFERENCE
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +-: 2.5	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000  Aneroid pressure  hPa : 1000
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +-: 2.5 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Ameroid pressure hPa : 1000 Tolerance mm + : 0.3
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Ameroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm +: 0.3 Check tolerance mm +: 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0 Check tolerance	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 4.0	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 str. + : 1.0
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 4.0	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm +: 0.3 Check tolerance mm +: 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.5
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. +- : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. +- : 4.0 Check tolerance cm3/1000s. +- : 4.0 Shutoff solenoid	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm + : 0.3 Check tolerance mm + : 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 str. + : 1.0 Check tolerance cm3/1000s. + : 2.5 Shutoff solenoid
Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 str. + : 2.5 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  CHECKING LOAD-DEPENDENT START OF DELIVERY  DELIVERY DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : -11.0 Tolerance cm3/1000 str. + : 4.0 Check tolerance cm3/1000s. + : 4.0 Shutoff solenoid Volt : 12	TIMING-DEVICE TRAVEL DIFFERENCE  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Tolerance mm +: 0.3 Check tolerance mm +: 0.4 Shutoff solenoid Volt : 12  KSB/AFB Volt : 12  EXHAUST-GAS RECIRCULATION  Rated speed rpm : 1000 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 str. +: 1.0 Check tolerance cm3/1000s. +: 2.5

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm 400

Del. quantity cm3/1000 strokes : 32.0

Tolerance

cm3/1000 str. +-: 5.0

Shutoff solenoid

Volt 12

KSB/AFB Volt 12

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 50.0

Tolerance

cm3/1000 str. +-: 10.0

Shutoff solenoid

Volt 12

KSB/AFB Volt 12 :

# ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm + : + 0,1Dimension KF mm : 5,4 Tolerance mm  $+-: \pm -0.2$ Dimension MS mm : 0,9

Tolerance mm + : +0.2

**MICROSWITCH** SET

mm : ARF12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 24,2..26,2

Control lever

: 53,0..63,6 position YB mm